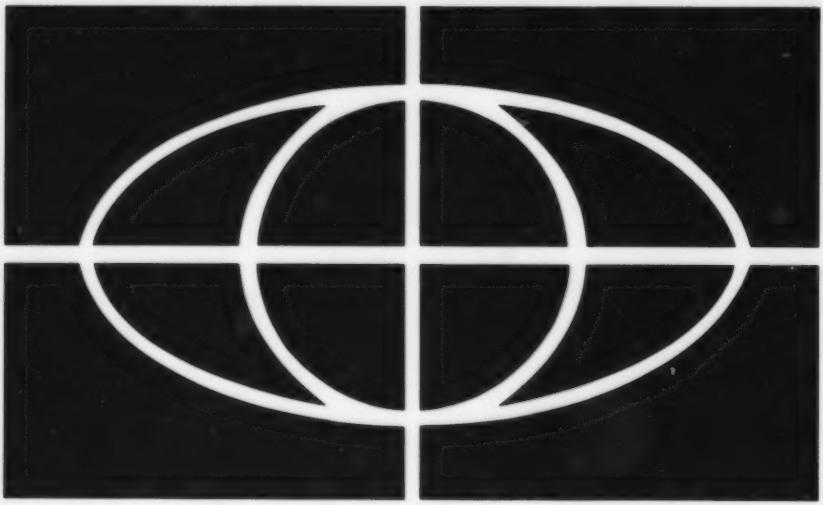
World Agricultural Changes

Implications for Canada



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Foreword

The past decade has witnessed considerable turmoil in world agricultural markets, with profound repercussions for the Canadian agricultural sector. In contrast to their experience of the 1970s — a period of high prices and rapidly expanding trade — Canadian farmers in the 1980s have suffered from a cost-price squeeze, a high debt load, and, most recently, severe drought. The escalation in agricultural protectionism and international trade conflicts has exacerbated the situation.

Canada's current challenge is to develop, in a climate of considerable fiscal pressure, an economically viable agricultural industry that can compete successfully in a liberalized world trading environment.

This is the setting in which Clay Gilson discusses the prospects for Canadian agriculture and Canada's agricultural policies in the years ahead. *World Agricultural Changes: Implications for Canada* addresses these challenges by examining:

- the prospects for food demand, supply, and trade in the 1990s;
- national agricultural policies in both the developed and the developing countries, and their implications for trade;
- the impact of the Canada-U.S. Free Trade Agreement on Canadian agriculture; and
- the progress being made toward liberalized agricultural trade in the Uruguay Round of the GATT.

Dr. Gilson observes that, although the political sensitivity of agricultural reform in the major producing countries makes

the process of liberalizing agricultural trade difficult, there is no viable alternative in the long term to the reduction of trade barriers through the GATT. This consideration, together with the evident costs of Canada's current agricultural policies, makes it appropriate for Canada to follow a strategy of domestic policy reform that replaces trade- distorting farm support programs with trade-neutral alternatives, such as direct income support.

Dr. Gilson concludes by noting that, despite recent difficulties, Canada has experienced impressive growth in agricultural production and exports over the past decade. An environment in which international trade is conducted on the basis of efficiency and comparative advantage, complemented with aggressive foreign marketing, will be one in which Canadian agriculture can reap enormous benefits in the years ahead.

The C.D. Institute believes that this study will make a significant contribution to a more informed national debate on reform of agricultural policy and on the steps Canada should take to ensure that Canadian agriculture can successfully face the challenges of the decade ahead. As with all Institute publications, the analysis and conclusions are those of the author, and do not necessarily represent the views of the Institute's members or directors.

Maureen Farrow
President
May 1989

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The original idea for this study came from Maureen Farrow, President of the C.D. Howe Institute, who invited the author to tackle what turned out to be an enormously challenging, sometimes intimidating, but extremely stimulating assignment. The theme of the work, the implications for Canada of the changes that are taking place in world agriculture, could not have been more timely or significant.

While it is not possible to list all those who have contributed to this work, the author is deeply indebted to a number of persons for their unwavering support and assistance during the past year: Maureen Farrow and Katie Macmillan of the C.D. Howe Institute, for their continuing encouragement and their comprehensive reviews of, and constructive suggestions for, improvements in earlier drafts of the manuscript; Len Siemens, Associate Dean, Faculty of Agriculture, University of Manitoba, for unlimited access to his personal library; Dr. Martin Yeh, Department of Agricultural Economics, University of Manitoba, who provided valuable advice on the agricultural reforms under way in China; Professor T.K. Warley, University of Guelph, and Dr. Bruce Huff, of the OECD in Paris, for their valuable and comprehensive assessment of an earlier draft of the manuscript; Dr. Jim MacMillan and the support staff of my department, who assisted in so many ways with work relating to the project; Bill Oakley, graduate student, for his professional assistance with many production problems; a very special debt of gratitude to Sharon Leonard for her unlimited patience and professional dedication to a project that involved unreasonable deadlines and the task of converting countless disjointed drafts into a final manuscript; Barry Norris, for his able editing and

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J.C. Gilson
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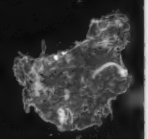

1

The Background

During the past 20 years, national and international events have created both unprecedented prosperity and optimism, as well as recession and widespread gloom, in Canadian agriculture.

The global food shortage and soaring prices for agricultural commodities during the mid-1970s, followed by several years of rapidly expanding trade in farm products, led to one of the more buoyant periods in history of the Canadian agricultural industry. In expanding their operations to take advantage of the high prices and expanding international markets for their products, farmers invested significant amounts of their own savings and capital, and leveraged this equity capital with enormous amounts of debt capital. Land prices and other capital investments soared in value as farmers continued to capitalize their rising incomes and prices into still further investment and the use of even greater amounts of highly leveraged debt capital.

This boom period in agriculture was transmitted to the agricultural supply and input industries — the credit, machinery, and chemical sectors — and to the agricultural marketing, processing, and transportation industries that handled the rapidly growing volume of agricultural production. The growing prosperity and optimism of Canadian

farmers spread to other sectors of the Canadian economy in the form of increased employment and investment activities.

Canadian farmers were vulnerable, however, to adverse events and policy changes in the national and international economy, as became painfully evident during the 1980s. The unprecedented rise in interest rates in the early 1980s created enormous damage in the Canadian farm industry, which had expanded previously on the basis of growing amounts of borrowed capital. Double-digit inflation, escalating oil prices, and indexed wage settlements in agriculturally related industries caused farm production costs to soar. Exchange-rate changes, the Third World debt crisis, growing global food surpluses, and other adverse international events began to dampen the prospects for expanding trade in farm products.

By the mid-1980s, Canadian farmers began to stagger under a cost-price squeeze and cash flow problems that made it increasingly difficult for them to service their debt load. By 1986 and 1987, even those farmers with a high equity in their businesses began to see their equity erode, savings decline, and capital plant depreciate as prices for their products continued to fall and export markets diminished. At the same time, this growing malaise in the farm sector spread to agriculturally related industries in the form of reduced earnings, investment, and employment activities, and to the public sector in the form of increased payments and assistance programs for farmers.

The ultimate irony occurred in the Canadian agricultural industry in 1988, when farmers, besieged by drought and greatly reduced crop yields, were unable to take full advantage of an abrupt and significant increase in grain prices.

One of the most troublesome issues for Canadian farmers has been the increase in protectionism and international conflicts relating to agricultural trade. During the Tokyo Round of multilateral trade negotiations under the General Agreement on Tariffs and Trade (GATT), there were high hopes that agricultural trade would be liberalized. Since the Tokyo

Round was concluded in 1979, however, agricultural trade conflicts have intensified. These conflicts have been extremely costly and damaging to Canadian farmers.

Canada initiated trade discussions with the United States in 1985 with the objective of obtaining a more secure and predictable access to that market. In 1986 it joined other countries to launch the Uruguay Round of GATT negotiations in the hope that ways would be found to reduce the escalating agricultural trade conflicts.

There should be no illusions about the depth and complexity of the problems on the agricultural trade front. The lack of progress on agricultural trade reform during the GATT Midterm Review in Montreal in December 1988 was a clear indication of the difficulties involved in the global trade negotiations.

Many fundamental questions relating to the current difficulties in world agriculture must be confronted. Are the global surpluses and depressed commodity prices that have characterized much of the 1980s a short-term phenomenon, or a basic structural condition of the world agricultural industry? What national conditions or policies, or global circumstances, have led to these surpluses and depressed prices? How are national policies to be reconciled with the international conditions and prerequisites for a more liberal agricultural trade policy? What basic forces have shaped national policies on agriculture, and can they be easily changed? What are Canada's viable, future policy options for its agricultural industry? Should it continue to depend on export trade, or turn inward to greater national self-sufficiency?

This study outlines the major global changes in agriculture that have had, and will continue to have, an enormous impact on Canadian agriculture and on the multilateral trade negotiations within which agricultural trade issues and conflicts have become predominant.

The main focus is on the grain sector, primarily because of the central importance that grain policies have had in the

global trade conflicts and negotiations of the past decade, and the major consequences that have followed for Canada's grain industry. This preoccupation with the grain sector, however, should not minimize the importance of global changes in, and trade negotiations on, other agricultural commodity sectors.

Chapter 2 analyzes the impact of such major factors as population growth, rising incomes, and global malnutrition on the current and projected demand for food.

Chapter 3 focuses on the technological developments and accompanying increases in agricultural productivity that have occurred in various regions of the world. These productivity increases have been aggregated in the form of projections for various commodities and regions to provide the basis for an assessment of the overall global food supply by the end of the century. The chapter analyzes the global food demand-supply balance and the consequences of this balance for international trade in various agricultural commodities. It also assesses the possible challenges and opportunities for Canada of global changes in demand, supply, and trade in food products by the year 2000.

National agricultural policies, the theme of Chapter 4, have contributed to and have been influenced by the global agricultural changes, trade issues, and conflicts that have emerged during the past decade. Discussion in this chapter focuses on agricultural policies in both the less-developed and the developed countries, and on the major agricultural reforms currently under way in the Soviet Union and China. The potential benefits of global agricultural trade reform cannot be understood without some knowledge of the national policies that must be changed if trade reform is to be achieved.

Chapter 5 presents an overview of the role of GATT in the trade negotiations, together with an analysis of the major issues underlying the Canada-U.S. Free Trade Agreement.

Chapter 6 examines the objectives and issues associated with the Uruguay Round of the GATT, and concludes with an assessment of the negotiating strategies and the prospects for

global agricultural trade reform in the round, which is to be completed by the end of 1990.

Chapter 7 outlines the implications of the global changes in agriculture and the probable outcome of the multilateral trade negotiations for Canada's agricultural industry. The discussion concludes with an assessment of the prospects for Canadian agriculture as the twenty-first century approaches.

Agricultural Trade Issues and Conflicts

Formal trade negotiations under the GATT have taken place for 12 of the past 30 years. Yet, agricultural trade protectionism nevertheless has increased. Relatively significant progress has been made on liberalizing agricultural trade through tariff reductions, but this has been more than offset by an increase in nontariff barriers to trade.

When the Uruguay Round of the GATT was launched in September 1986, it had to deal with issues and conflicts in agricultural trade that were strikingly similar to those that had prevailed during the late 1950s and 1960s.

In 1958, the GATT published a report — commonly referred to as the Haberler Report — which concluded that agricultural trade was dominated by growing protectionism, the accumulation of surplus stocks, large fluctuations in the export earnings of agricultural producers, and the inability of the less-developed countries to expand their export trade at a rate sufficient to sustain their growth and development.[1]

The Haberler Report's pessimism anticipated the disappointing lack of progress on the liberalization of agricultural trade that occurred during the 1961–62 Dillon Round of the GATT. It also reflected the beginning of the United States' hos-

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1 General Agreement on Tariffs and Trade, *Trends in International Trade* [The Haberler Report] (Geneva, 1958).

tility toward the highly protectionist system of agricultural supports that was being launched under the Common Agricultural Policy (CAP) of the newly formed European Economic Community — referred to subsequently in the text as the European Community (EC).[2]

The GATT Ministerial conference resolution adopted in May 1963, which initiated the Kennedy Round (1964–67), stated that agricultural products were to be included in the multilateral trade negotiations. Despite this resolution, the continuing conflict between the United States and the EC over agricultural trade matters resulted in relatively little progress in agricultural trade under the Kennedy Round.

Throughout the Kennedy Round, the EC emphasized the need for the "management" of world markets under world commodity agreements. The United States insisted on a greater market orientation in agricultural trade, together with basic modifications of the highly protectionist system developed under the CAP.

The Tokyo Round of the GATT, launched in September 1973, included as a part of its declaration a statement that the negotiations should aim to:

> include, as regards agriculture, an approach to negotiations which, while in line with the general objectives of the negotiations, should take account of the special characteristics and problems in this sector.[3]

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2 The official term "Commission of the European Communities" — the result of the merger of the European Economic Community, the European Coal and Steel Community, and Euratom — is rarely used. The abbreviations EEC and EC coexist, and for all intents and purposes mean the same thing (see V. Curzon Price, *Free Trade Areas: The European Experience*, Observation 31 (Toronto: C.D. Howe Institute, 1987, p. 19).

3 S. Golt, *The GATT Negotiations 1983–79: The Closing Stage* (London: British-North American Committee, 1978), p. 35.

This highly qualified declaration reflected an uneasy compromise between the United States and the EC over two basically different approaches to the agricultural trade negotiations. The United States insisted that agriculture should be included as an integral part of the general negotiations; the EC maintained that agriculture must be treated as a special case and handled accordingly, apart from the general negotiations.[4] This divergence between the United States and the EC continued throughout the Tokyo Round.

More fundamentally, the divergence reflected the strongly-held U.S. view that certain basic features of the CAP — that is, variable import levies, high internal price supports, and the use of export restitutions — had to be modified, and the equally strong and contrary position taken by the EC that the main pillars of the CAP were nonnegotiable.

While the conflicts between the United States and the EC dominated trade negotiations throughout much of the 1960s and 1970s, many other countries' domestic agricultural policies also contributed to the growing global protectionism in agricultural trade.

There was some movement toward the liberalization of agricultural trade under the Tokyo Round. Progress was modest, however, and the more fundamental trade issues remained unresolved at the end of the round. An acknowledgement of this failure came in the form of a final, and somewhat desperate, recommendation to the GATT Contracting Parties in April 1979 — the final month of negotiations — that a consultative framework be developed after the Tokyo Round to continue discussions on agricultural trade issues.

The immediate post-Tokyo Round negotiations were no more successful than those which had taken place during the 1973–79 period. A Ministerial Declaration of the GATT Contracting Parties in November 1982 admitted an almost total

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4 M. Tracy, *Agriculture in Western Europe*, 2nd ed. (London: Granada, 1982), p. 377.

lack of progress on agricultural trade issues. It was agreed that the Contracting Parties would attempt:

> to bring agriculture more fully into the multilateral trading system by improving the effectiveness of GATT rules — to this end a major two-year work programme shall be undertaken.[5]

The most discouraging aspect of the post-Tokyo Round negotiations has been that agricultural trade issues and conflicts have intensified, not diminished as GATT members had hoped. Since 1982, the agricultural trade scene has been dominated by increasingly costly and disruptive conflicts among several of the GATT members. What is even more alarming, these conflicts have continued to intensify despite the strong commitments to a "cease-fire" arrangement made by the Contracting Parties when the Uruguay Round was launched in September 1986.

It has become increasingly evident during the 1980s that agricultural trade issues have become deeply rooted in highly protectionist domestic agricultural policies, and that trade conflicts cannot be resolved without a major reform of these national policies.

Major trade reform calls for significant changes in the domestic farm policies of the majority of GATT members. Domestic farm programs and associated trade policies in the United States, some of which have their roots as far back as the *Agricultural Adjustment Act* and the *Smoot-Hawley Tariff Act* of the 1930s, will require major changes to correspond with the more liberal trading position the United States has taken during the Uruguay Round. Basic trade reform also requires a substantial modification of the EC's Common Agricultural Policy, which has been a central part of the EC for the past

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5 General Agreement on Tariffs and Trade, *Ministerial Declaration* (Geneva, adopted November 29, 1982).

three decades and which the EC has insisted is nonnegotiable. Japan, the world's largest importer of agricultural products, has developed many forms of internal price supports and an associated variety of import restrictions that cannot remain isolated from the liberalization of global agricultural trade.

While Canada traditionally has supported greater trade liberalization under the GATT, it too has developed a variety of price- and income-support measures and a range of import restrictions designed to protect its agricultural producers from the vagaries of the domestic and international marketplace. Trade-distorting aspects of these policies are bound to be examined during the course of the Uruguay Round negotiations.

Many other countries, including the newly industrialized and less- developed countries, which have been granted special and differential treatment under previous rounds of multilateral trade negotiations, also will not remain untouched by the consequences of a more liberal, global agricultural trading arrangement.

The urgent need for global agricultural trade reform has become increasingly obvious in recent years. Escalating agricultural trade conflicts among the major trading countries have generated enormous instability in the global trading arena and have imposed a tremendous cost on consumers and taxpayers. Worldwide spending on agricultural programs, which now totals over U.S.$200 billion,[6] has not resolved the fundamental farm problems in the developed countries. It has also accentuated the difficulties of many of the less-developed countries, where malnutrition, hunger, and massive external debts still persist.

The countries involved in the launching of the Uruguay Round in September 1986 made commitments on agriculture

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6 Organisation for Economic Co-operation and Development, *Monitoring and Outlook for Agricultural Policies, Markets and Trade* (Paris, May 1988)

that were a collective acknowledgement of the seriousness of the sector's global trade problems. The following chapter analyzes the basic problems and issues that must be tackled, and assesses the prospects for meaningful reform in both domestic agricultural and trade policies under the Uruguay Round.

2

World Food Demand in Perspective

The projected increase in world population, and the regional distribution of that increase, will have a major impact on the global demand for and trade in food products by the end of the century.

Population Trends

The relationship of population growth to the availability of food has long been a matter of debate among economists and demographers. The most famous treatise on the subject was written by Robert Malthus in 1798 in his *Essay on the Principle of Population as It Affects the Future Improvement of Society*, later revised and extended in 1803 and entitled, *Essay on Population*. Malthus feared that population growth would outrun food production:

> Given the 'passion between the sexes,' the need for food, the observed fact that population increased when the means of subsistence decreased, and the declining yield of the soil, the

> point must be reached when the increase in population overtakes the increase in the supply of food.[1]

It was Malthus' contention that population growth tended to increase in a geometric progression, while food production tended to increase at only an arithmetic rate. He concluded that much of the world's population would be condemned to live at a subsistence level in vice and misery.

Even today the debate continues. One school of thought holds that continuing poverty and hunger in the Third World is clear evidence that Malthus was essentially correct. An alternative view is that population growth is not at the root of hunger — that there is plenty of capacity to feed the world's population for the foreseeable future.

Before looking at the balance between world population and food, it is necessary to examine the nature of population growth during the past several decades and to assess the implications of projected future population growth rates in various regions of the world.

It is clear that world population growth has increased at an accelerated rate during most of the past 200 years (Figure 1). Historians suggest that it probably required two to five million years to reach a world population of 1 billion by 1800. It then took 130 years to reach 2 billion, 30 more years to reach 3 billion, and 15 years to top 4 billion. The world's population is projected to reach 6 billion in 1998. The rate of world population growth, however, which began to slow down in the 1970s, is projected to decelerate even further during the next decade.

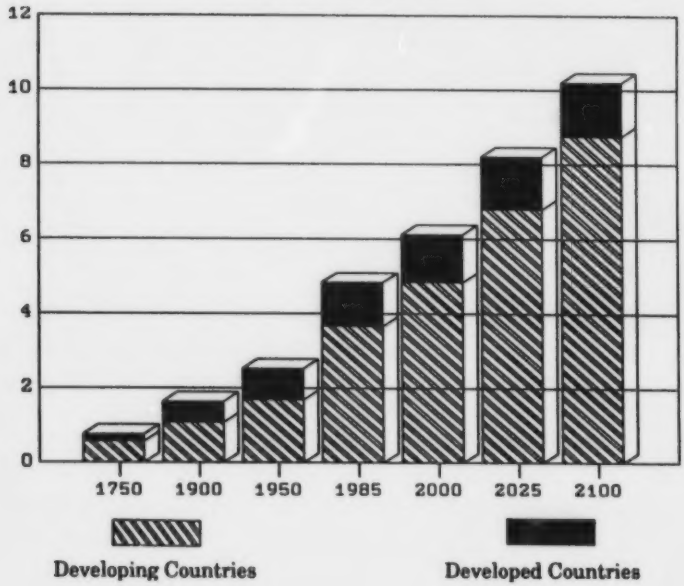
As Figure 1 illustrates, by far the most rapid population growth since 1950 has occurred in the developing countries. In that year, approximately two-thirds of the world's population was located in the developing regions; by 2000, it is expected that this proportion will have increased to 79 percent.

1 Quoted in E. Roll, *A History of Economic Thought*, 2nd ed. (New York: Prentice-Hall, 1942), pp. 208–209.

Figure 1

World Population Growth, 1750–2100

(billions of people)



Source: World Resources Institute, *World Resources, 1987* (New York: Basic Books, 1987), p. 9.

While the rate of population growth has declined in recent years, it should be noted that approximately 80 million people — equivalent to the entire population of Mexico — were added in 1987, the year in which world population reached 5 billion.

The rate of population growth varies enormously among the countries of the world (see Table 1). During the 1980–85 period, the annual rate of population growth varied from 4.1 percent in Kenya to 2.6 percent in Mexico, 0.9 percent in the United States, and approximately zero in the United

Table 1

Average Annual Rates of Population Growth, Selected Countries, 1970–2005
(percentage increase)

	1970–75	1980–85	Projected 2000–05
Soviet Union	0.95%	0.95%	0.69%
Kenya	3.87	4.12	3.89
Zambia	2.89	3.31	3.49
Mexico	3.23	2.59	1.70
China	2.37	1.17	0.95
France	0.79	0.30	0.16
Canada	1.20	1.21	0.69
United States	1.04	0.86	0.68
World	*2.03*	*1.67*	*1.39*

Source: World Resources Institute, *World Resources, 1986* (New York: Basic Books, 1986), pp. 236–237.

Kingdom. Kenya's annual growth rate of 4.1 percent means that the country's total population will double in about 17 years; the Soviet Union's annual increase of 1.0 percent means that it will require 70 years to double its population.

The most explosive population growth is taking place in Africa. At a projected population growth rate of 3.0 percent per year, Africa's current population of about 877 million people will reach approximately 1.37 billion by the end of the century and double to 1.75 billion by 2008.

The Demand for Food

What are the implications of this population increase for world food demand and distribution? The average annual global population increase of 86 million between 1985 and 2000 will require an additional 28 million tonnes of cereals

per year — almost equivalent to Canada's total grain exports in crop year 1986–87.[2]

The increasing concentration of the world's population in large urban centers will have a significant impact on the rural economy and on the processing, storage, and distribution of agricultural commodities.[3] Nearly 161 million people were concentrated in the world's 14 largest urban centers in 1985 (see Figure 2). The United Nations Food and Agriculture Organization estimates that "during the last two decades of the twentieth century nearly a half billion people in the developing world will move from the countryside to the cities."[4]

In a more general sense, one can expect increasing amounts of food products to move from surplus-producing regions to regions of high population growth and food deficits, in the form of either commercial sales or food aid.

The projected world population growth and the regional distribution of that growth raise several basic questions for world agriculture. To what extent will regions and countries of high population growth be able to provide their own food needs? To what extent will these regions depend on the surplus-producing regions to provide their additional food requirements? What will be the impact of these additional food needs on the global surpluses and low prices for farm products that have characterized much of the agricultural sector during the 1980s? What will be the role of food-aid programs during the next decade? What are the general implications of the projected increase in world population for national agricultural policies and for the Uruguay Round of multilateral trade negotiations? Will the Malthusian specter continue to haunt the high-population-growth countries, or will

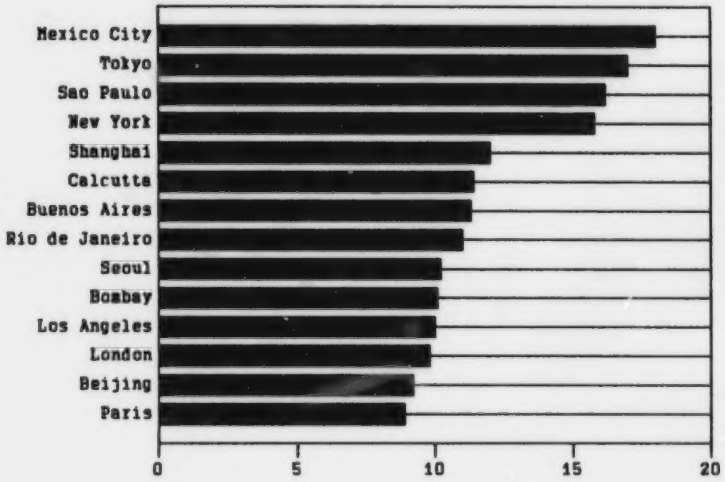
2 The "crop year" runs from August 1 to July 31 — for example, crop year 1986–87 runs from August 1, 1986, to July 31, 1987.

3 World Resources Institute, *World Resources, 1988–89* (New York: Basic Books, 1988), pp. 41–43.

4 United Nations, Food and Agriculture Organization, *CERES, The FAO Review* 20 (September/October 1987): pp. 15–16.

Figure 2

Population of the Largest Urban Centers, 1985
(millions)



Source: World Resources Institute, *World Resources, 1986* (New York: Basic Books, 1986), p. 252.

surpluses and chronically low prices and incomes continue to reappear at periodic intervals during the foreseeable future? The answers to these questions have enormous implications for Canadian agricultural producers.

In analyzing the world demand for food, a number of factors need to be considered. Obviously, population growth will be the predominant factor. Others include future income growth in the less-developed countries and the extent of malnutrition in the existing population. Provision must also be made for minimum food needs during times of major calamities, such as drought.

Prospects to 2000

Total world food consumption in 1982 is estimated to have amounted to 3.76 billion tonnes, half of which was in the form of grain. Assuming an average world population increase of approximately 86 million people per year between 1988 and 2000, grain consumption will increase by about 28 million tonnes annually. By the end of the century, global annual grain consumption will have increased by 340 million tonnes over the annual global consumption rate in 1988.

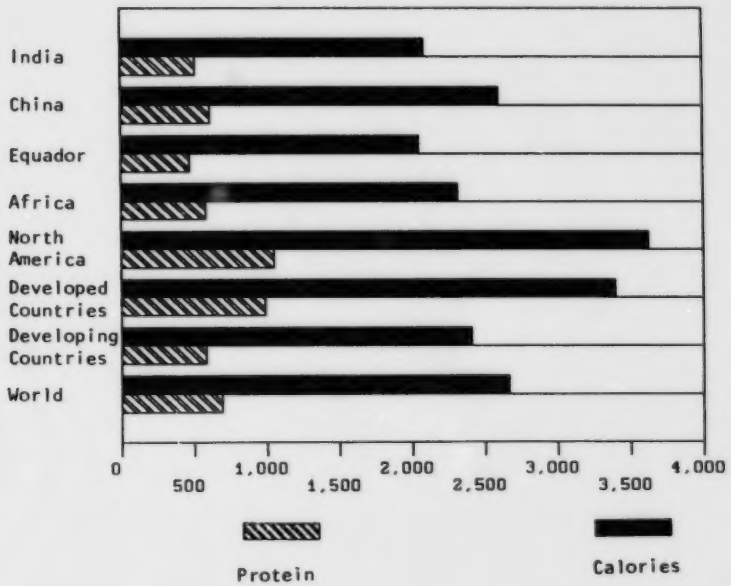
About 78 percent of the population increase of one billion between 1988 and 2000 will occur in the developing countries. It follows, then, that a major part of the increase in global grain consumption also will occur in those countries. The extent to which agricultural trade will occur among the various regions of the world will depend, to a major degree, on the agricultural productivity increases experienced in both the developed and developing countries during the next decade.

Further potential increases in the global demand for food could occur if the gap were closed between those who are well nourished and those who are starving or who suffer chronic malnutrition. World Bank statistics indicate that as many as 500 to 700 million people suffer from chronic malnutrition, and millions more — predominantly children — die from starvation each year.

There is an enormous variation in food consumption per capita among and within various regions of the world, as shown in Figure 3. In Chad, for example, the daily intake of calories was 60 percent of requirements during the 1982–84 period, compared with 120 percent in Tunisia and South Africa. In Bolivia, Ecuador, and Peru, the ratio fell well below the minimum requirement, while in Paraguay the ratio was 122 percent. By contrast, daily caloric intake was 131 percent of requirements in Canada and 139 percent in the United States during the same period.

Figure 3

Calorie and Protein Consumption, Selected Regions, 1981–83
(milligrams per capita per day)



Source: United Nations, Food and Agriculture Organization, *FAO Production Yearbook, 1985* (Rome, 1985), pp. 271–273.

Caloric intake is, however, only one measure of adequate nutrition. One of the major causes of malnutrition is the lack of adequate protein in the diet. People in some countries have a relatively high daily caloric intake but a very low intake of protein; in other countries, people suffer from both a low caloric and a low protein intake, again as shown in Figure 3.

In general, global food demand-supply analyses indicate that the majority of people suffering from chronic malnutri-

tion and periodic starvation reside in South Asia, Sub-Saharan Africa, and in parts of South America. With some significant exceptions, the "hunger-belt" straddles the equator.[5] If the estimated 700 million people suffering from chronic malnutrition increased their caloric intake — in the form of grain — by a minimum of 10 percent over present consumption levels, the estimated annual increase required would amount to approximately 23 million tonnes of grain.

An additional potential increase in the global demand for food could result from improvements in income and standards of living, and the associated improvement in dietary standards, of the millions of people residing in the poorer countries of the world. Studies have indicated that in Third World countries where there has been a rising per capita income, consumers spend an increasing share of their food budget on red meats, poultry, eggs, and dairy products. In converting from a diet based primarily on food cereals to one based on a growing consumption of high-protein products, there is a proportionately greater increase in grain requirements to feed the animals and poultry. (Feed conversion ratios can vary from 2:1 for poultry to 4:1 for pork, and even higher ratios for red meat and dairy products).

Between the late 1960s and late 1970s, the use of cereals for feed in Third World countries increased 50 percent faster than their direct consumption for food. One study projects that the demand for cereal feed in these countries will grow at 4.7 percent per year, to 245 million tonnes in 2000 from 100 million tonnes in 1980 — sufficient to sustain an average growth of 3.7 percent in the output of livestock products (see Figure 4). Based on traditional patterns of trade, it is estimated that this increase in feed grain use could generate an additional annual world trade volume of at least 10 million tonnes by 2000.

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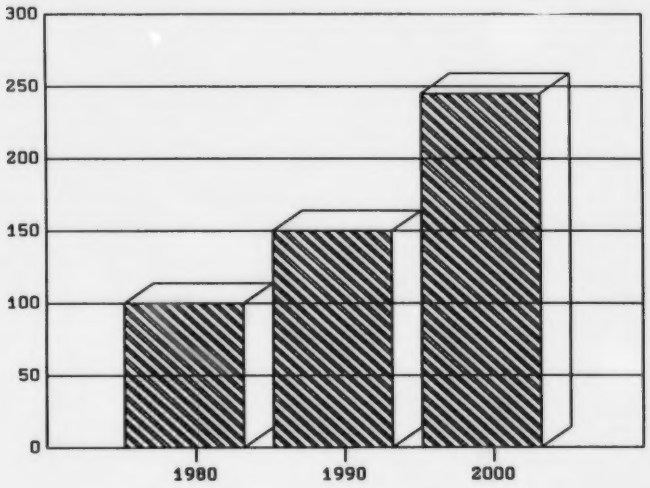
5 International Institute for Applied Systems Analysis, *Options*, 1–2, 1987.

Figure 4

Cereal Feed Use in Third World Countries, 1980–2000[a]
(millions of tonnes)



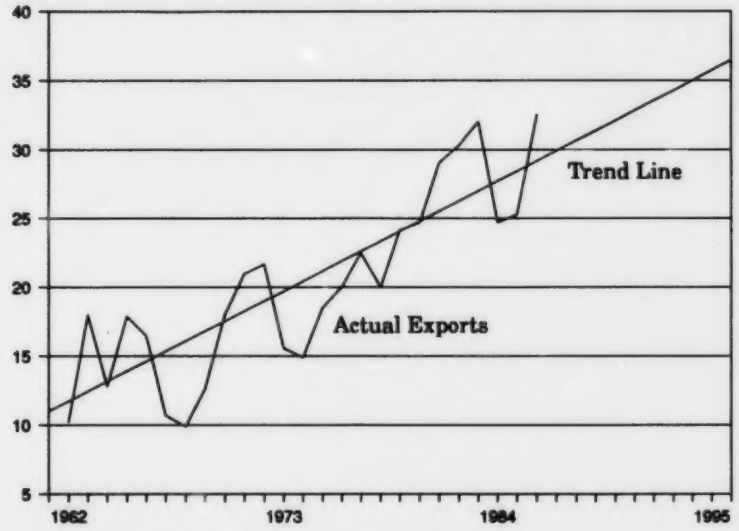
[a]Data for 1990 and 2000 are based on projections for livestock output.

Source: J. Sarma, *Cereal Feed Use in the Third World*, Research Report 57 (Washington, D.C.: International Food Policy Research Institute, December 1986).

Thus, the aggregate annual increase in world grain consumption by 2000 could be in the neighborhood of 370 million to 380 million tonnes above the current level, a figure which suggests that Canada's grain exports could increase significantly. If about 15 percent of the aggregate annual increase is traded, and if Canada simply retains its traditional share of that trade — between 18 and 22 percent for wheat and between 4 and 8 percent for feed grains — Canada's exports of these commodities could expand by close to 10 million tonnes annually by 2000. This increase would be added to total wheat and feed grain exports of 28 million tonnes in crop year 1986–87. When other grains — rye, flax, and canola — are

Figure 5

Exports of Canadian Grain, crop years 1962–63 to 1985–86
(millions of tonnes)



Source: Canadian Wheat Board, *Annual Report*, various issues.

added, Canada's total grain exports by 2000 could exceed 40 million tonnes, compared with 32.4 million tonnes in 1986–87 (as shown in Figure 5).

If these expanded export possibilities are realized, the effect on Canada's grain industry could be significant indeed.

The Importance of Global Food Reserves

In examining the longer-term trends in the global demand for food, it is well to keep in mind that some minimum level of food reserves is also important from the standpoint of world

food security. To an extent greater than many people realize, it was the huge U.S. grain surpluses (and the idled cropland) that "stood as the world's buffer between enough to eat and famine"[6] during the food shortage of the 1970s. Ironically, these same grain stocks were criticized harshly in the United States and elsewhere during the 1960s as having a depressing effect on world grain prices.

Given the precarious balance that exists between food demand and supply in many of the less-developed countries, measures to provide some form of minimum level of food security during periodic calamities have become extremely important. In India, for example, reserve grain stocks fell to 5.2 million tonnes by 1975, an amount wholly inadequate to offset such calamities as the major famine which persisted in that country from 1973 to 1975. Since that time, India has established a much higher target for its grain reserve stocks. Adverse weather conditions in India in 1987 caused a major slump in its food production, again emphasizing the importance of having a national grain stock reserve system to prevent widespread starvation.

A more detailed examination of global food stocks follows in Chapter 3.

International Food Aid

While national reserve food stocks are a vital form of food security during times of major calamities, some regions and countries have had to depend on international forms of food aid and disaster relief during times of extreme emergencies. During the past quarter century, recurring drought, massive floods, insect plagues, and civil war have caused major food calamities in China, Nigeria, Bangladesh, India, and in several countries in Central and South America and Sub-

6 B. Rensberger, "Early Warnings," in New York Times Staff, *Give Us This Day...* (New York: Arno Press, 1975), p. 8.

Table 2

Average Annual Donations or Receipts of Food Aid, Selected Regions and Countries, 1974–85
(thousands of tonnes)

	Cereals		Vegetable oils	Milk
Country or region	**1974–76**	**1983–85**	**1983–85**	**1983–85**
Africa	1,799	5,781	127	150
North & Central America	-4,749	-6,158	-278	-173
South America	394	366	22	24
Asia	4,202	2,678	144	90
Europe	-738	-1,099	-11	2
Oceania	-259	-425	1	2
Selected countries				
Egypt	620	1,850	8	29
Ethiopia	79	462	22	16
Chile	236	11	n/s	4
Peru	32	178	16	5
Bangladesh	1,308	1,305	11	n/s
India	981	282	66	42
Pakistan	585	391	53	11
Canada	-770	-867	-37	-13
United States	-4060	-6,189	-298	-204

n/s = not significant; less than 500 tonnes.

Source: World Resources Institute, *World Resources, 1988–89* (New York: Basic Books, 1988), pp. 278–279.

Saharan Africa. Some indication of the amount and distribution of food aid in recent years is indicated in Table 2.

Cereals represent by far the largest part of the official development assistance food aid program. In crop year 1984–85, approximately 12.5 million tonnes of cereals were shipped as food aid, with 4.76 million tonnes going to Sub-Saharan Africa alone.

Food aid is provided through a variety of bilateral and multilateral programs. Canada provides bilateral food aid primarily through the Canadian International Development

Agency, while its support of multilateral food aid programs is channeled primarily through the World Food Program. Since its initiation in 1963, this program has developed into one of the more important multilateral instruments for the coordination and integration of food emergency measures in Third World countries. The emergency food aid under the program covers sudden natural disasters that result in massive crop failures, and acute food shortages resulting from man-made disasters such as civil wars.

In addition to international programs aimed at major emergency disasters and short-term food crises, food aid has also been used as an instrument for longer-term economic development. For example, food aid has been used as a form of "wages" in local development projects in Turkey and in many less-developed countries, including Botswana, Colombia, India, Lesotho, and Pakistan.

There can be little question about the value of food aid as a form of disaster relief during times of sudden and major calamities. In the longer term, however, food aid is not the answer to recurring food shortages. As the Brandt Commission noted,

> continuing dependence on food aid can result in many problems and disadvantages for the recipient countries...[I]nternational food aid can lead to a variety of consequences: a disincentive for local agricultural producers to expand production; reduction in the recipient country's commitment to domestic agricultural development; the encouragement of consumption habits and tastes which cannot be met from domestic production.[7]

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7 Independent Commission on International Development Issues, *Common Crisis* (London: Pan Books, 1983), p.130*ff*. In 1980, the Commission, under the chairmanship of Willy Brandt, former chancellor of West Germany, published a report entitled *North-South: A Programme for Survival.* Three years later, worsening economic conditions and the lack of global cooperation impelled the Brandt Commission to prepare a new publication, *Common Crisis*, which set out guidelines for North-South cooperation for world recovery.

Food aid is the only humanitarian way to cope with immediate and massive food shortages in the less-developed countries. In the long term, however, ways must be found to increase the productivity of agriculture in these countries, and to develop programs that encourage the systematic storage of surplus food stocks during favorable growing periods for use during periods of widespread crop loss.

3

Food Supply, Trade, and the Demand-Supply Balance

This chapter addresses three major topics: global food supply, agricultural trade, and the balance between world demand and supply.

Domestic agricultural policies have tended to encourage national self-sufficiency for many products through high internal price supports and various import-restriction measures. In spite of this growing protectionism, however, it is remarkable that world trade in agricultural products has continued to increase: in 1987, it amounted to $251 billion and represented about 10 percent of total world merchandise trade. The following discussion analyzes the underlying forces affecting global food supply, and the consequences that follow for national policies and world trade in agricultural products.

Technological Developments and Agricultural Productivity

The world's population is expected to reach 6.1 billion by the end of the next decade, and to increase to 8.2 billion by 2025. Will agricultural productivity increases be sufficient to

feed such numbers? Since the world's land and water resources are limited, the answer to this question will depend, in large part, on scientific and technological developments in food production during the next ten to 15 years.

The Agricultural Land Base

The most important factor to bear in mind is that the agricultural land base is relatively fixed and that the ratio between cropland and population is diminishing. It is estimated that by 2000, there will be approximately 0.25 hectares of cropland per capita, compared with 0.39 hectares for the 1971–75 period (Figure 6). Of course, this ratio varies tremendously among countries. By 2000, it is projected that cropland per capita will be 0.04 hectares in Japan and 0.11 hectares in China, compared with 0.84, 0.73, and 1.47 hectares, respectively, in the United States, the Soviet Union, and Canada.

The alarming aspect of this diminishing cropland-population ratio is the considerable degradation that has occurred and that will continue to take place in the quality of the agricultural land resource as world population increases. Recent studies have indicated that a significant proportion of the world's agricultural land is being destroyed each year by such factors as soil erosion, desertification — including salinization — loss of forests and the associated deterioration in the soil resource, and urban-industrial encroachment on farmland.[1] The most spectacular example of the loss of agricultural land can be found in Sub-Saharan Africa, but few countries are exempt from the problem.

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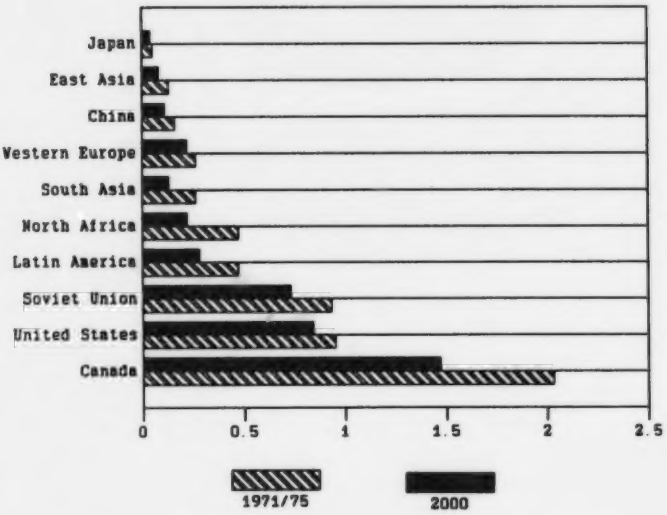
1 G.O. Barney, *The Global Report to the President* (Washington, D.C.: U.S. Government Printing Office, 1980), pp. 39–40. See also World Resources Institute, *World Resources 1988–89* (New York: Basic Books, 1988), Chapters 5 and 13.

Figure 6

Cropland Per Capita, Selected Regions and Countries, 1971–75 and 2000
(hectares)



Source: World Resources Institute, *World Resources, 1986* (New York: Basic Books, 1986), p. 47.

Substitutes for Land in Agricultural Production

Since the late 1940s, increases in agricultural productivity have been due largely to scientific and technological advances in crop and livestock production. These advances have been based on a growing array of production inputs that have, in effect, substituted for the land resource. These inputs include such factors as irrigation, chemical fertilizers, herbicides and insecticides, genetic improvement in livestock and crop

production, and the growing use of machinery and equipment powered by fossil fuels.

As will be discussed later, these technological advances have had an enormous impact on productivity and on the basic economic and social structure of the rural community, not only in the advanced, industrial countries but also in the less-developed countries.

Whether the rate of increase in agricultural productivity, based on technological advances, can be sustained in the longer term depends heavily on a number of considerations associated with the major agricultural production inputs.

Water for Irrigation

Without doubt, much of the increased agricultural productivity, particularly in Asia, has been based on the availability of irrigation water coupled with the use of fertilizer and other crop technologies. Of the 185 million hectares of land irrigated in 1985, 68 percent was in Asia. Between 1950 and 1980, there was an explosive increase in irrigated agricultural land; between 1980 and 1985, by contrast, there was a substantial slowdown in the amount of new irrigated land added to the agricultural production base.

The prospects for further expansion of irrigated land are limited. It is anticipated that per capita water supplies for irrigation purposes could decline significantly over the next decade due to population increases and the competing demands of urban-industrial users.[2] Moreover, as such water supplies diminish, international conflicts over the use of water almost certainly will arise. As one study notes,

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2 Barney, *Global Report to the President*, p. 26. See also World Resources Institute, *World Resources, 1988-89*, Chapter 8.

> the potential for conflict over fresh water alone is underscored by the fact that out of 200 of the world's major river basins, 148 are shared by two countries and 52 are shared by three to ten countries.[3]

Another serious issue associated with agricultural irrigation is emerging with the significant depletion of groundwater resources in many parts of China, India, the United States, and in parts of Sub-Saharan Africa.

In general, then, one cannot expect agricultural productivity increases based on irrigated land during the foreseeable future of anywhere near the significance of those of the past three decades.

Fertilizer Use

Between 1950 and 1986, world fertilizer use expanded enormously, from 14 million to 131 million tonnes. In effect, this expanded use of fertilizer offset the declining ratio between grain area and population, as shown in Figure 7. There can be no doubt that it also contributed in a major way to the global increase in grain production, particularly where used in conjunction with irrigation.

The expanded use of fertilizer, however, varied tremendously among countries. The greatest expansion occurred in Asia, particularly in Japan, China, India, Bangladesh, and Pakistan. By contrast, only a few countries in Africa, such as Egypt, Swaziland, Zimbabwe, and South Africa, significantly expanded their use of fertilizer.[4] By far the most intensive use of fertilizer — kilograms per hectare — occurs in countries such as Japan, Egypt, France, and the United Kingdom.

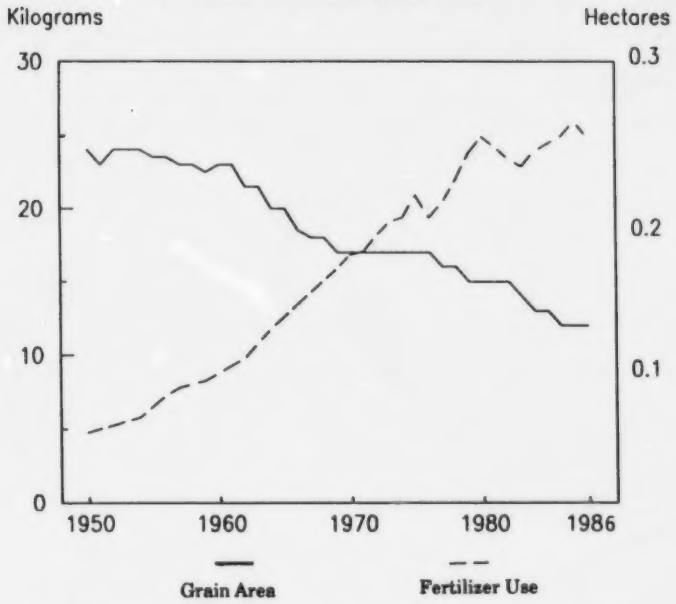
Since 1980–81, there has been a marked slowdown in fertilizer use, particularly in certain less-developed countries

3 Barney, *Global Report to the President*, p. 40.

4 United Nations, Food and Agricultural Organization, *Fertilizer Yearbook 1985* (Rome, 1985).

Figure 7

World Fertilizer Use and Grain Area Per Capita, 1950–86



Source: L. Brown, *State of the World, 1987* (New York: W.W. Norton, 1987).

whose international debt problems have made it increasingly difficult for them to import fertilizer supplies. Clearly, an increase in income in these countries could allow them to expand their use of chemical fertilizers, thereby increasing agricultural productivity.

Mechanization, Energy Use, and Labor

One of the more important aspects of technological advances in agriculture in the developed countries has been the high

degree of mechanization attained in the agricultural production process. In these countries, capital in the form of tractors, self-propelled combines, and highly automated livestock production processes has replaced labor.

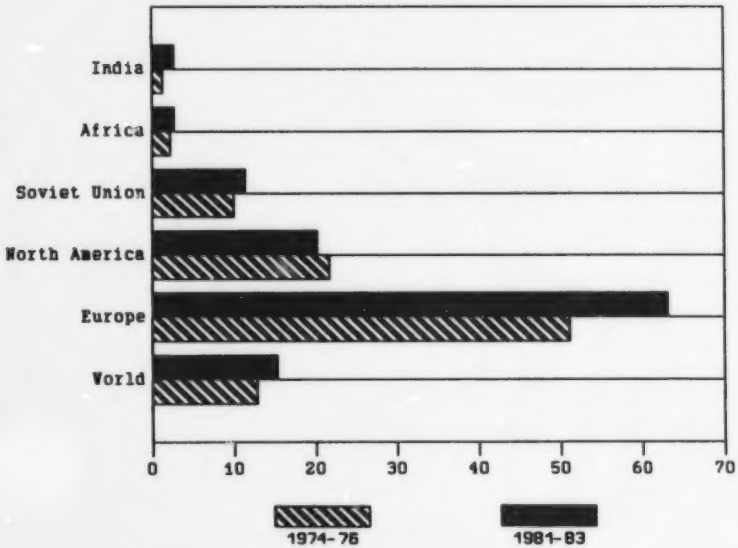
In the less-developed countries, labor-intensive production practices are still predominant, although the importance of mechanization is increasing. In India, for example, the number of tractors per 1,000 hectares of arable and permanent cropland increased to 2.7 during the 1981–83 period from 0.3 in 1974–76 (see Figure 8). In Japan, by contrast, the number increased to 312 from 9.9 during the same period.

Increased mechanization and use of chemical fertilizers in agriculture have called for rapid increases in the use of energy, particularly of fossil fuels. Between 1950 and 1985, it is estimated that global tractor fuel consumption for agricultural production increased to 739 million barrels from 143 million barrels of oil equivalent; the corresponding consumption of energy in the manufacture of fertilizer increased to 646 million barrels from 70 million barrels of oil equivalent. It is clear that countries without their own sources of fossil fuel are highly dependent on fuel imports — or on products based on energy sources — for the mechanization of their agricultural industries and for other energy-using production practices associated with irrigation and the use of fertilizers.

The overall effect of technological advances in agricultural production has been to increase the productivity of the given agricultural land resource, and to replace labor with capital in the production process. In Canada, for example, only 5 percent of the total labor force was involved in agricultural production in 1980, compared with 70 percent in China and India, 79 percent in Sub-Saharan Africa, and 37 percent in Mexico (see Figure 9). Labor displacement in agriculture in the developed countries has not taken place without difficulties — disruptions have occurred in the economic and social structure of rural communities, and gainful employment in

Figure 8

Agricultural Mechanization: Tractor Use in Selected Regions and Countries, 1974–76 and 1981–83
(tractors per 1,000 hectares of arable & permanent cropland)



Source: World Resources Institute, *World Resources, 1986* (New York: Basic Books, 19860, p. 265.

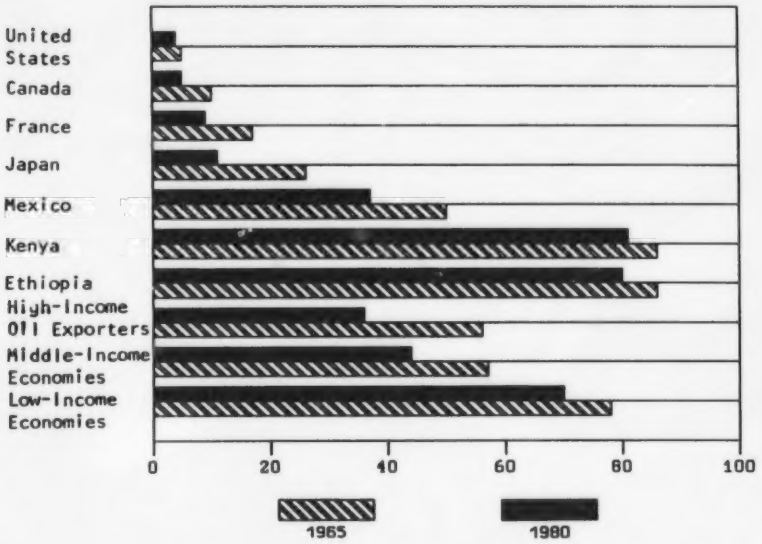
other sectors has had to be developed for persons displaced from agriculture. The difficulties will be even more difficult for many of the less-developed countries, where alternative employment opportunities for labor displaced from agriculture are extremely limited.

The Green Revolution

The so-called "green revolution" was originally defined as the "development and widespread adaption of high-yielding

Figure 9

Labor Force Engaged in Agriculture, Selected Regions and Countries, 1965 and 1980
(percentage of total labor force)



Source: World Bank, *World Development Report, 1986* (New York: Oxford University Press, 1986), pp. 238–239.

strains of wheat, corn, and rice in the Third World."[5] More recently, it has been defined as almost any "package of modern agricultural technologies introduced into the Third World."

Beginning in the 1960s, Dr. Norman Borlaug, the pioneer of the green revolution, and dozens of collaborating scientists,

5 World Hunger Project, *Ending Hunger* (New York: Praeger, 1985), p. 409.

first at Chapingo and later at Centro Internacional de Mejoramiento de Maiz y Trigo, in El Batan, Mexico, have played a major role in greatly increasing food production.[6]

The green revolution led to spectacular increases in rice and wheat production in countries such as Mexico, India, and Pakistan. For example, rice yields in the Punjab area of India increased from 1.1 tonnes to 2.6 tonnes per hectare between 1960 and 1975 as a result of the introduction of new varieties.[7]

The spread of the green revolution in Asia, however, has not been without its difficulties. Much of the green revolution in its later stages has been fuelled by fertilizers, herbicides, pesticides, irrigation, and new credit mechanisms, all of which have meant additional costs that the poorer Third World countries have found difficult to meet.

While the green revolution has helped some countries to achieve crop yields of as much as 4,500 kilograms per hectare, many African countries have been unable to attain yields of even 1,000 kilograms per hectare.[8] If the green revolution has had such a widespread, beneficial effect in many parts of Asia, why has it not had a more positive impact in Africa? Several reasons have been cited, among them civil war, economic policies that discriminate against farmers, lack of progress in research relevant to local conditions, lack of water and irrigation possibilities, and lack of sound soil and moisture conservation practices.[9]

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6 B. Rensberger, "Down-to-Earth-Science," in New York Times Staff, *Give Us This Day...* (New York: Arno Press, 1975), pp. 197*ff*.

7 World Hunger Project, *Ending Hunger*, p. 111.

8 World Resources Institute, *World Resources, 1986* (New York: Basic Books, 1986), p. 45*ff*.

9 "If India, Why Not Africa?" *The Economist*, August 8, 1987.

Since the mid-1970s, a major agricultural research program has been developed to focus better on the local problems and opportunities associated with a variety of crops produced in various parts of Africa.[10] Two major research centers in Africa are of particular importance: the International Institute of Tropical Agriculture, established in Nigeria in 1967, and the International Livestock Center for Africa, established in Ethiopia in 1974. Promising new developments are beginning to emerge from this research, but no one underestimates the difficulty of spreading the green revolution, particularly in Sub-Saharan Africa. Agricultural productivity per capita has been declining in several African countries in recent years, partly because of rapid population growth, indicating the enormous challenges still to be faced.

The Grain Productivity Record

Grain productivity increases during the past three decades have been highest in North America and Western Europe and lowest in South Asia, South America, and Africa (Figure 10). North America and Western Europe are the major grain-exporting regions of the world, and these two regions have also developed farm programs that have encouraged productivity increases through various forms of production subsidies.

From a global point of view, grain productivity increases have largely kept pace with the increase in world population (Table 3). Productivity increases during the past ten to 15 years, however, have varied enormously among countries. By far the most alarming productivity trend is the slow and persistent decline in grain production per capita in Africa. This general decline has resulted from a population growth that has exceeded the relatively modest gains in grain production.

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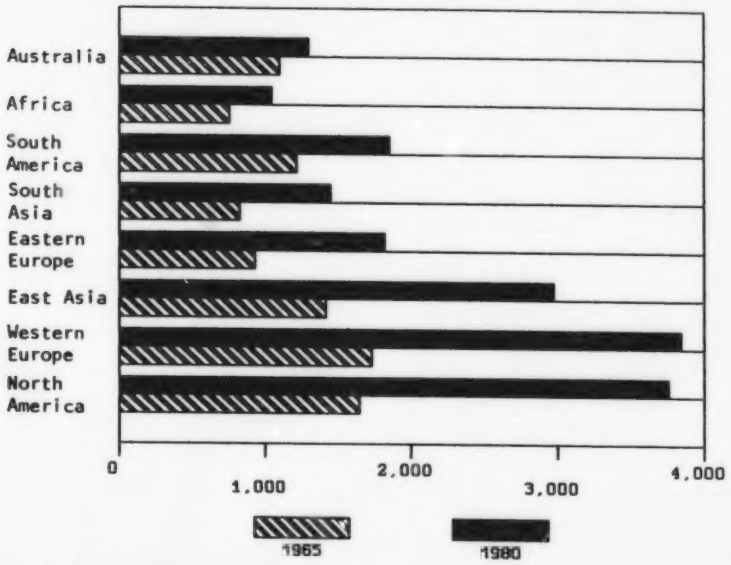
10 World Resources Institute, *World Resources, 1987* (New York: Basic Books, 1987), pp. 50*ff*; and idem, *Consultative Group on International Research* (Washington, D.C., 1987).

Figure 10

Grain Yields in Various Regions, 1965 and 1980
(kilograms per hectare)



Source: World Resources Institute, *World Resources, 1986* (New York: Basic Books, 1986), p. 47.

In Western Canada, there has been a slow increase in grain production, but year-to-year fluctuations around that trend — largely due to periodic drought — have been significant (Figure 11).

New Developments in Biotechnology

Crossbreeding in both plants and animals permits breeders to select for highly desirable production characteristics and to utilize hybrid vigor to increase yields. High-yielding, disease- and drought-resistant plant varieties have been developed, while genetics has permitted remarkable advan-

Table 3

World Grain Production, 1960–87

	World population (billions)	Grain production	
		Total (millions of tonnes)	Per capita (kilograms)
1960	3.03	845	279
1965	3.34	920	275
1970	3.68	1,101	299
1975	4.03	1,248	310
1980	4.42	1,440	326
1985	4.80	1,841	383
1987	5.00	1,610	322

Note: The years 1985 and 1987 were added to the data presented in the source.

Source: L. Brown et al., *State of the World, 1984* (New York: W.W. Norton, 1984), p. 177.

ces in animal and poultry production. These advances have led to a biological revolution in agricultural and food production, and have fuelled the green revolution in many less-developed countries. There can be no question that without such advances, rapid population growth would have created a prolonged food catastrophe in many areas.

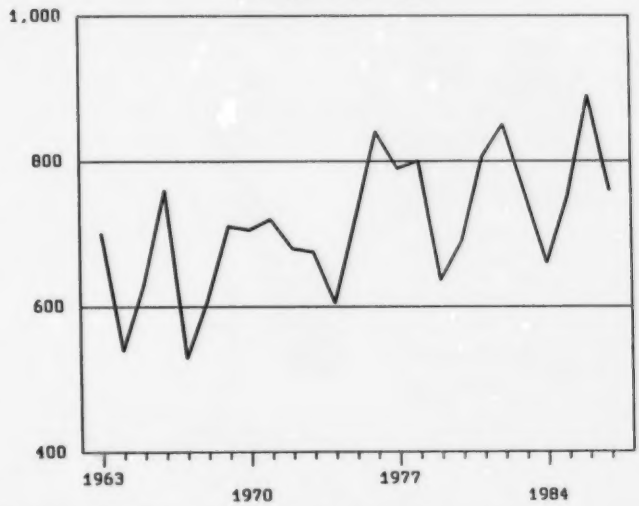
The world is now on the threshold of a whole new set of scientific and technological developments that promise to create still another revolution in agricultural production. Recent discoveries in genetics, molecular biology, and biochemistry have opened the door to wide-ranging possibilities under the label "genetic engineering" or "biotechnology".[11] While the commercial and practical possibilities that

11 Selected references on the origin, definition, and evolution of genetic engineering and biotechnology include W.H. Johnson and W.C. Steere, eds., *This Is Life* (New York: Holt, Rinehart and Winston, 1962); E.G. Jaworski, "Genetic Engineering," *AIC Agrologist* (Winter 1985); University of Alberta, *Symposium in Biotechnology and Plant Science Bulletin* 7 (March 1984); and M. Stuart-Harle, "A New Lease on Life," *Canadian Research in Biotechnology* (Toronto, October 10, 1987.

Figure 11

Wheat Yields in Western Canada, crop years 1963–64 to 1987–88

(kilograms per acre)



Source: Canadian Wheat Board, *Annual Report*, various issues.

could follow from these new technologies are not yet clear, they are potentially enormous. They include: self-fertilizing grain crops, higher-yielding crops with higher nutritional content, disease-proof crops, crops that grow faster by absorbing more sunlight, plants that produce both tomatoes and potatoes, mutants that resist herbicides, plants that defy drought, transgenic animals — the crossbreeding of sheep and goats, for example — and super animals produced by gene-splicing and the use of hormones.[12]

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12 See, for example, "Revolution in the Lab," *Globe and Mail* (Toronto), July 25, 1981; "Genes Go Farming," *The Economist*, October 31, 1987; A.W. Murray and J.W. Szostak, "Artificial Chromosomes," *Scientific American*, November 1987; and "Biotechnology," *The Economist*, April 30, 1988.

While the speed with which these emerging technological developments will be introduced is uncertain, it is likely that they will tend to offset the diminishing quality and quantity of the agricultural land and water resources in the long term. The evidence does suggest, however, that increasing population pressures on the use of marginal resources will make the global agricultural industry much more vulnerable to widespread fluctuations in climatic conditions. Accordingly, one can anticipate the probability of greater instability in world agricultural prices and incomes in the years ahead.

Trends in Food Supplies and Trade Patterns

Several general aspects of global food supply need to be kept in mind while examining trends in world food supplies and trade patterns.

First, North America and Western Europe may be characterized as the major surplus-producing regions, while many countries in Africa, South Asia, parts of East Asia, and the Middle East tend to have structural food deficits. Second, several of the less-developed countries have achieved major productivity increases through the green revolution but remain vulnerable to food shortages because of major climatic factors. Third, China and the Soviet Union have been major importers of agricultural products, particularly grain. Both countries, however, have the potential capacity for major increases in agricultural production before the end of the century if agricultural reforms currently under way are successful. Fourth, only a relatively small proportion of the global production of many agricultural products is traded annually. Finally, agricultural protectionist policies have encouraged production under high and stable domestic price and income policies, and have accentuated the instability of quantities traded and prices received in international markets.

World Grain Production

During the past two decades, total world grain production has increased by about 45 percent, while total grain exports have approximately doubled in volume.[13] Since 1980–81, 10 to 15 percent of the world production of grains has been traded — the figure is about 20 percent in the case of wheat.

Many factors have contributed to the increase in grain production. The green revolution has been the biggest single contributor in countries such as Mexico, India, Pakistan, and China. In many developed countries, a significant part of the increased production may be classified as "policy induced". Grain producers in surplus-producing countries such as the United States and the European Community (EC), and in grain-deficit countries such as Japan, have adopted more intensive production technologies and have responded, accordingly, to high domestic price- and income-support programs. In most cases, domestic producers in these countries have been isolated from the effects of surpluses and low prices in the international marketplace.

One of the largest and most unpredictable wheat producers is the Soviet Union (see Figure 12). In crop year 1978-79, for example, Soviet wheat production reached approximately 120 million tonnes and then collapsed to 68 million tonnes in 1983–84. By contrast, Chinese wheat production has increased steadily, from about 36 million tonnes in 1972–73 to about 90 million tonnes in 1987–88.

The largest producer of coarse grains is the United States, followed by the Soviet Union and the EC (Figure 13). In contrast to the EC, coarse grain production in the United States has been characterized by large year-to-year and cyclic swings. These fluctuations have been due partly to domestic

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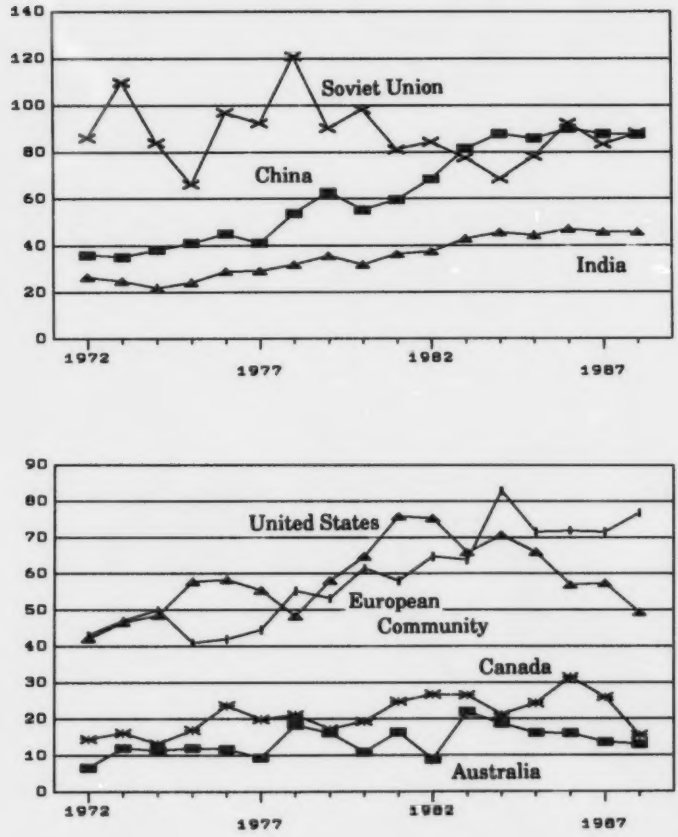
13 United States, Department of Agriculture, Foreign Agricultural Service, *World Grain Situation and Outlook* (Washington, D.C., December 1988).

Figure 12

Wheat Production in Selected Countries, crop years 1972–73 to 1987–88

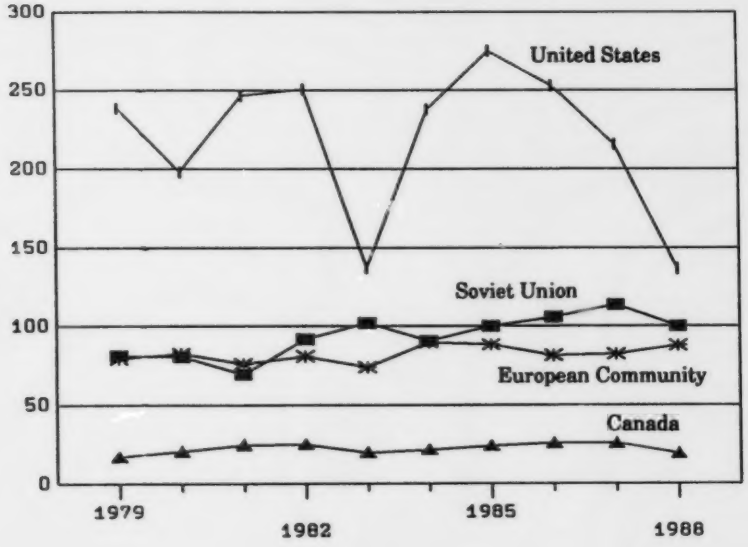
(millions of tonnes)



Sources: United States, Department of Agriculture, Foreign Agriculture Service, *World Grain Situation and Outlook* (Washington, D.C., December 1987); and Canadian Wheat Board, *Annual Report*, various issues.

Figure 13

Coarse Grains Production in Selected Countries, crop years 1979–80 to 1987–88
(millions of tonnes)



Source: United States, Department of Agriculture, Foreign Agriculture Service, *World Grain Situation and Outlook* (Washington, D.C., November 1988).

policies — such as acreage reserve programs — and partly to major climatic changes.

While a relatively small amount of global agricultural production is traded internationally, this trade is extremely volatile in terms of quantity and price. The international market is, in many ways, a residual market — small changes in global food production are greatly amplified in the interna-

tional market. For example, global wheat production in crop year 1987–88 amounted to 500 million tonnes. Yet a 10 percent increase in production — 50 million tonnes — would have been equivalent to 50 percent of world wheat trade that year. This volatility in the international marketplace is quickly transmitted to the national agricultural economies of those countries that do not have border-protection measures in place or that have no internal price-support system to buffer producers against international price variability.

Sharing the World Grain Trade Market

In crop year 1987–88, the United States, Canada, and the EC contributed almost 70 percent of world wheat exports, while the major wheat importers were the Soviet Union and China (Figure 14).

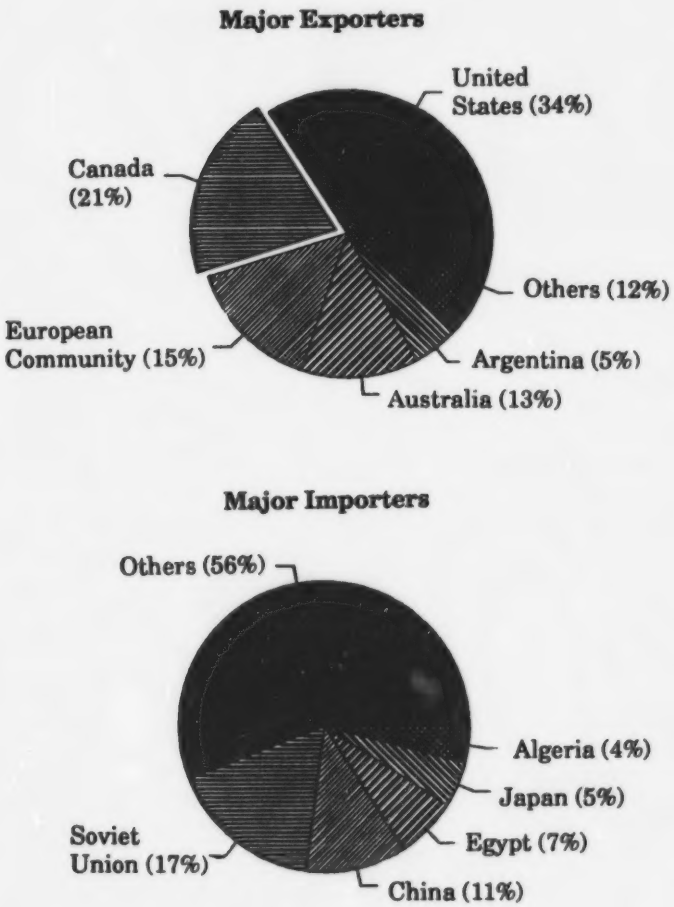
Approximately 51.5 percent of Canada's wheat exports in 1987–88 went to two countries — the Soviet Union and China. China purchased 51 percent of its total wheat requirements from Canada in that crop year, while the Soviet Union bought 20 percent of its wheat imports from Canada. Other major importers of Canadian wheat included Italy, the United Kingdom, and Japan.

The United States has maintained a dominant share of global wheat exports since the beginning of the 1970s. Its market share has declined, however, from 48.4 percent in 1981–82 to approximately 34 percent in 1987–88. During the same interval, the EC's share of the market climbed slightly from 13.9 percent to about 15 percent. During the past decade, Canada's share of the world wheat market has varied from a low of 17.1 percent in 1984-85 to 22.4 percent in 1987–88.

As Figure 15 illustrates, the United States is by far the largest exporter of coarse grains, accounting for an estimated 49 percent of total exports in crop year 1987–88. Canada's share during the same crop year was a mere 6 percent.

Figure 14

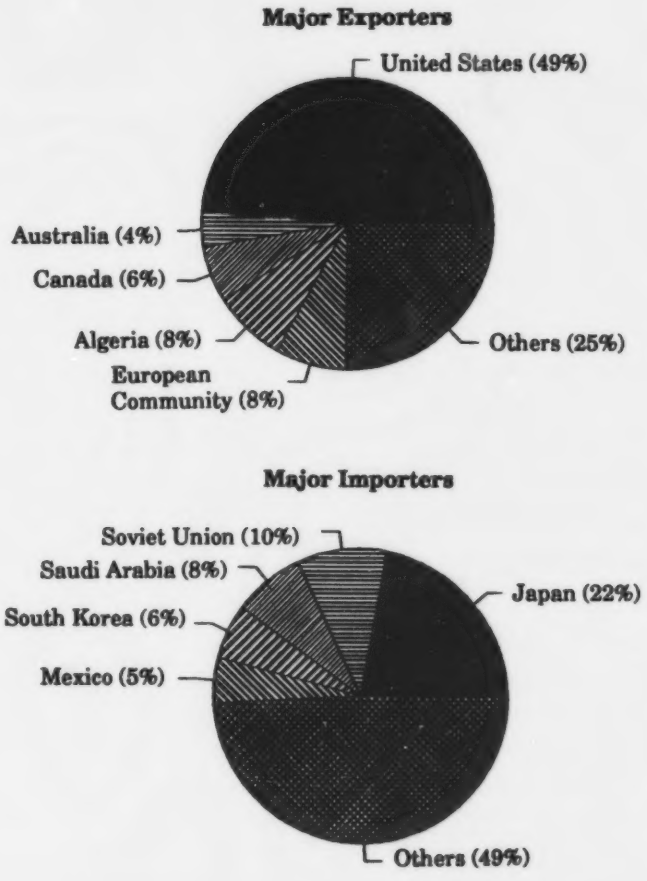
Major Wheat Exporters and Importers, crop year 1987–88
(percentage of market share)



Source: United States, Department of Agriculture, Foreign Agriculture Service, *World Grain Situation and Outlook* (Washington, D.C., November 1988).

Figure 15

Major Exporters and Importers of Coarse Grains, crop year 1987–88
(percentage of market share)



Source: United States, Department of Agriculture, Foreign Agriculture Service, *World Grain Situation and Outlook* (Washington, D.C., November 1988).

The two major importers of coarse grains in 1987–88 were Japan and the Soviet Union. Imports of coarse grains by the Soviet Union and Western Europe have been extremely variable from year to year. For example, the Soviet Union imported 27.3 million tonnes in 1984–85 and only 13.5 million and 11.5 million tonnes, respectively, in the two following years. During the past decade, world coarse grain exports have ranged from 83 million tonnes (1985–86) to a peak of 108.8 million tonnes in 1980–81.

The Oilseeds Sector

During the past two decades, there has been a steady increase in world consumption of vegetable oils and vegetable protein meals. While soybeans continue to be the major source of both the oils and the meals, other sources of oils — such as palm, sunflowerseed, rapeseed, and cottonseed — are gaining in importance. Table 4 shows the production of these commodities in crop year 1987–88.

Approximately 20 percent of the global production of oilseeds, 32 percent of the major protein meals, and 33 percent of major vegetable oils were exported in 1987–88.

As Table 5 indicates, the United States is by far the largest producer of soybeans, although Brazil, China, and Argentina are growing in importance. China, followed by the United States, the Soviet Union, and India are the largest producers of cottonseed. China, the EC, and Canada are the largest producers of rapeseed, a growing source for the production of protein meals and oils. The largest producer of sunflower seed is the Soviet Union, but Argentina, the EC, and Eastern Europe are also important producers of this crop.

By far the largest part of the export trade in oilseeds is based on soybeans, with the United States being the dominant exporter, although Brazil and Argentina are increasing in importance. The dominant importer of soybeans is the EC, al-

Table 4

Major World Sources of Oilseeds, Protein Meals, and Vegetable and Marine Oils, crop year 1987–88
(millions of tonnes)

	Oilseeds	Protein meals	Vegetable & marine oils
Soybean	102.91	66.27	14.96
Cottonseed	30.98	11.16	3.46
Peanut	19.70	4.12	2.91
Sunflowerseed	20.60	8.16	7.24
Rapeseed	22.97	12.48	7.56
Flaxseed (linseed)	2.28	1.19	0.64
Copra	4.34	1.52	—
Palm kernel	2.69	1.41	1.15
Coconut	—	—	2.64
Olive	—	—	1.88
Fish	—	6.11	1.43
Palm	—	—	8.58
Total	*206.46*	*112.43*	*52.45*

Source: United States, Department of Agriculture, Foreign Agriculture Service, *World Oilseed Situation and Market Highlights* (Washington, D.C., January 1989), p. 12.

though Japan has been an important customer for that commodity as well.

Two major aspects of global supply changes in vegetable oilseed production should be noted: a major reduction in the U.S. production of oilseeds during the past decade, and a significant increase in oilseed production in the EC. These developments appear to be associated with changes in agricultural policies.

In the United States, the reduction in oilseed production appears to have been the unintended consequence of price-support and acreage-control policies relating to wheat, feed

Table 5

Major Soybean and Cottonseed Producers, crop years 1982–83 to 1986–87
(millions of tonnes average per crop year)

Soybeans		Cottonseed	
United States	52.94	China	7.54
Brazil	15.99	United States	4.00
China	10.12	Soviet Union	4.76
Argentina	6.45	India	3.20
European Community	0.30	Pakistan	1.96
Paraguay	0.71	Brazil	1.29
Other	0.45	Other	5.96
Total	*92.96*	*Total*	*8.71*

Source: United States, Department of Agriculture, Foreign Agriculture Service, *World Oilseed Situation and Market Highlights* (Washington, D.C., January 1989), p. 13.

grain, cotton, and rice. Distorting program incentives for grain crops may have reduced U.S. oilseed production by as much as 30 percent during the past ten years.[14]

In the European Community, by contrast, policy-induced surpluses in grain production, combined with government-supported price levels for oilseed production at two to three times the world price, have provided a powerful incentive for a phenomenal growth in oilseed production, particularly rapeseed and sunflower seed.[15] While the EC remains a major importer of oilseeds, U.S. exports of soybean and soybean meal to the EC have been declining steadily since 1981–82.

Canada, currently the third-largest producer of rapeseed (canola), depends heavily on the export market for much of its sales. Between 1977 and 1987, about 83 percent of Canada's

14 Cargill Bulletin, February 1989.

15 United States, Department of Agriculture, Foreign Agriculture Service, *World Oilseed Situation and Market Highlights* (Washington, D.C., January 1989), p. 43.

rapeseed production was exported in the form of oilseeds, meal, and oil.

World Production and Trade in Major Meat Products

In general, only a relatively small percentage of total world meat production is exported, as Table 6 shows, and the developing countries tend to export less of their production than do the developed countries.

In the case of particular countries, however, trade represents a relatively large proportion of domestic meat production. Beef and veal production in Australia and New Zealand extends far beyond those two countries' domestic requirements, while Japan, the Soviet Union, and several of the developing countries are major importers of beef, veal, and other meat products. The United States is a net importer of both beef and pig meat, while the EC has an export surplus of both commodities. Canada exports approximately 25 percent of its hog production, but imports nearly 75 percent of its sheep meat.

Current and projected demand and supply prospects for the different regions of the world do not suggest a major expansion in international trade in meat. Countries and regions such as Australia, New Zealand, Canada, and the EC will continue to export either bovine meat or pig meat, or both, to countries such as Japan, the United States, the Soviet Union, and several of the newly industrialized countries. The most rapid increase in production likely will occur in the poultry and pig industries in many of the less-developed countries. This increase, however, likely will translate into greater national self-sufficiency for many countries that previously were significant importers of such commodities. At the same time, this could mean greater imports of feed grain supplies from the surplus-producing countries. The potential increase in

Table 6

Meat Production and Trade, 1980 and 1990

(thousands of tonnes)

	1980 actual			1990 projected			
	Production	Gross exports	Exports as % of production	Production	Gross exports	Exports as % of production	Per capita consumption[a]
Bovine meat							
World	44,840	5,540	12.3	49,508	5,403	10.9	10.0
Developing	13,184	1,465	11.1	15,391	1,336	8.7	3.9
Developed	31,656	4,075	12.9	34,117	4,067	11.9	26.9
Sheep and goat meat							
World	7,583	1,108	14.6	9,050	1,241	13.7	1.7
Developing	3,973	163	4.1	4,987	146	2.9	1.3
Developed	3,610	945	26.2	4,063	1,095	27.0	2.8
Pig meat							
World	50,840	3,187	6.3	60,319	3,258	5.4	11.4
Developing	16,607	367	2.2	22,850	379	1.6	5.1
Developed	34,233	2,820	8.2	37,469	2,879	7.7	29.3
Poultry meat							
World	25,417	1,665	6.6	32,462	1,720	5.3	5.7
Developing	7,092	304	4.3	10,209	425	4.2	2.3
Developed	18,325	1,361	7.4	22,253	1,295	5.8	15.2

[a]Kilograms per year, 1980.

Source: United Nations, Food and Agriculture Organization, *Agricultural Commodity Projections* (Rome, 1986), pp. 100–101.

demand for meat products in the less-developed countries is quite significant, but will depend heavily on rising per capita incomes in these regions.

Despite the relatively small amount of meat traded internationally, it remains an important export (and import) commodity for many countries. There is little question that the international meat trade sector has been, and likely will continue to be, vulnerable to trade-protectionist measures. Many domestic agricultural policies, as well as border controls and export subsidies, continue to have serious trade-distorting effects on the meat sectors of many countries.

Prospects for the 1990s

While there will be a substantial increase in the global demand for food products by the end of the century, there is considerable capacity in the agricultural sector for an expansion of supply. This expansion will come from the significant excess capacity that currently exists in regions such as the United States and the EC, and from increased productivity arising from developments in the fields of biotechnology and genetic engineering.

The extent to which trade in various agricultural commodities increases will depend, to a large degree, on the progress made in reforming domestic agricultural and trade policies in the Uruguay Round of negotiations under the General Agreement on Tariffs and Trade (GATT). Under a more liberal world trading arrangement, it is expected that trade in agricultural commodities — particularly feed grains, oilseeds, and, perhaps, beef and pork — will expand at a faster rate than the expected increase in global food production.

If the less-developed countries are more completely integrated into a liberal trading arrangement than has hitherto been the case, one can expect a greater volume of trade between the developed and less-developed countries.

The Demand-Supply Balance

In general, increases in world food production have approximated annual rates of increase in population growth. During the 1970–75 period, the average annual rate of growth in world population was 2.03 percent; it averaged 1.67 percent during the 1980–85 period, and is expected to increase at about 1.39 percent annually toward the end of the century. These rates of population growth represent a general benchmark against which to measure the adequacy of global food production increases.

During the 1974–84 period, annual food production increases for all developing countries averaged 3.1 percent, compared with an annual population increase of 2.1 percent; in 1985, the food production increase of 2.6 percent was still slightly more than the corresponding population increase of 2.4 percent (Table 7). In Africa, however, the increase in food production in 1985 (2.5 percent) fell behind population growth (2.9 percent).

National Food Self-Sufficiency

In contrast to the many food-deficit countries of Africa, South Asia, and South America, food production in most of the developed countries, with the exception of Japan, greatly exceeds national consumption requirements, as shown in Table 8. Canada's production of wheat, for example, exceeded national consumption requirements by 390 percent during the 1979–81 period; the corresponding figures for the United States and the EC were 299 percent and 118 percent, respectively. Japan, by contrast, produced only 9 percent of its national wheat requirements, but 88 percent of its pig meat requirements.

The EC is much more than self-sufficient in most of its agricultural products, particularly cereals, red meats, dairy

Table 7

Food Production and Population in the Developing Countries, 1974–84 and Extrapolation to 1985
(annual percentage increase)

	Food production		Population	
Region	**1974–84**	**1985**	**1974–84**	**1985**
Developing market economies	3.0	2.6	2.5	2.7
Africa	1.9	2.5	3.1	2.9
Far East	3.6	2.4	2.3	2.6
Latin America	3.0	2.9	2.4	2.8
Near East	2.6	3.1	2.7	2.9
Asian centrally planned economies	4.1	2.6	1.4	1.6
All developing countries	3.1	2.6	2.1	2.4

Source: World Resources Institute, *World Resources, 1986* (New York: Basic Books, 1986), p. 51.

products, and poultry. Japan produces slightly more than half of its national food requirements.

Food Demand-Supply Adjustments

Regional demand-supply imbalances for agricultural products are accommodated in the following ways:

- through commercial trade — the movement of products from surplus to deficit regions;
- through noncommercial food-disposal measures;
- through production-control measures; and
- through adjustments in global food stocks.

Traditionally, most regional demand-supply adjustments have occurred through commercial trade. In recent years,

Table 8

Self-Sufficiency Rates for Various Commodities, Selected Countries, 1979–81[a]

(average percentage)

Commodity	United States	Canada	European Community[b]	Australia	Japan	New Zealand
Butter	112%	98%	116%	123%	84%	606%
Cheese	100	94	106	148	13	377
Skimmed milk powder	150	216	126	137	54	5,310
Wheat	299	390	118	484	9	86
Barley	110	162	112	314	16	123
Maize	151	97	66	107	—	127
Oats	90	95	98	125	n/a	100
Rice (husked)	256	—	72	852	95	n/a
Soybeans	176	n/a	—	n/a	4	n/a
Sugar[c]	58	10	124	411	31	n/a
Beef and veal	91	102	102	217	72	324
Pig meat	99	113	101	101	88	98
Poultry	106	97	108	102	94	100
Sheep meat	93	28	73	219	—	592
All study commodities[d]	129	170	101	262	57	350

n/a = not available; a dash (—) = nil or negligible.

[a]Production/consumption x 100.

[b]All present members of the EC except Portugal and Spain.

[c]Centrifugal, refined value.

[d]The sum of the value of production/value of consumption (food and feed) x 100 for all study commodities, both production and consumption being valued at the same world reference prices (those used in the model for this study).

Source: Organisation for Economic Co-operation and Development, *National Policies and Agricultural Trade* (Paris, 1987), p. 15.

however, a number of national agricultural policies and trade-intervention programs have had the effect of unduly restricting trade through various types of import controls, or of moving domestic agricultural surpluses abroad through export subsidies and surplus disposal measures.

Supply Adjustment in the United States

If one measures "excess supply" as the difference between potential supply and commercial demand at prevailing prices, one could conclude that the United States has had an excess supply of many agricultural products for much of the past half century. It has been suggested that excess agricultural supply in the United States comes from three sources:

- production potential from reduced program acres (diverted production);
- noncommercial exports; and
- unsold output or excess supply.[16]

Excess capacity for seven major U.S. crops is estimated to have amounted to 13 percent of total production during the 1979–85 period, while in 1982 and 1985 excess supply amounted to approximately 9 percent of production. It is also estimated that in 1985, the real value of long-term excess capacity amounted to $8.5 billion, significantly greater than the previous excess supply peak in the 1960s (see Figure 16).

The carryover stocks held by the United States will be examined below. It should be noted, however, that with the reduced loan rate and provision for export-enhancement programs under the 1985 *Food Security Act*, the United States signaled its intention to carry a share of the world's surplus stocks that is greatly reduced from previous years.

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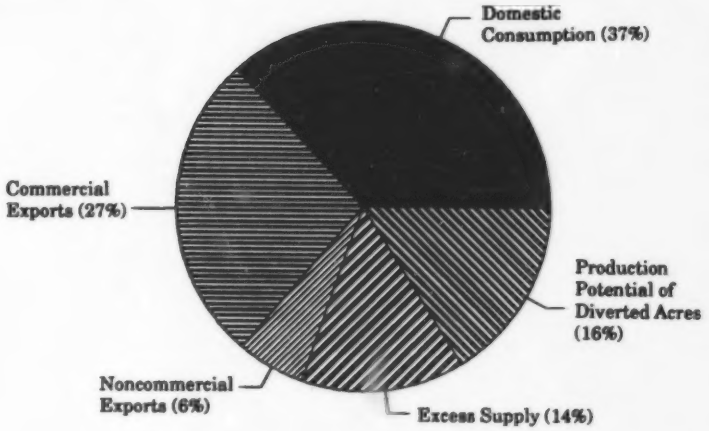
16 United States, Department of Agriculture, Economic Research Service, *Agricultural Outlook* (Washington, D.C., October 1986).

Figure 16

Distribution of U.S. Agricultural Productive Capacity, 1985
(percent, by type of use)



Source: United States, Department of Agriculture, Economic Research Service, *Agricultural Outlook* (Washington, D.C., October 1986).

Coping with Excess Capacity in the European Community

It has been estimated that the EC's annual cereal surplus, if unchecked by production controls or disposal, could reach 43.5 million tonnes by 1990.[17]

By January 1987, the EC's surplus stocks of such commodities as cereals, butter, skim milk powder, beef, and wine had already become so large that it was clear that measures

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17 Home Grown Cereals Authority, *Cereal Surpluses in the EEC* (London, August 1985).

Table 9

Major Surplus Commodities in the European Community, January 1987

	Stock held on		Book value (public)	Cost per annum for quantity held on Aug. 30, 1986		
	Aug. 30, 1985	Aug. 30, 1986	Aug. 30, 1986	Storage	Interest	Total[a]
	(thousands of tonnes)		(millions of European Currency Units)			
Butter (intervention)	1,014	1,360	4,403	132.7	308.3	441.0
Butter (private)[b]	209	148	505	19.8	22.4	42.2
SMP	473	956	1,719	17.1	120.3	137.4
Beef[c]	782	730	1,862	107.6	130.3	237.9
Subtotal, animal products	*n.a.*	*n.a.*	*8,489*	*277.2*	*581.3*	*858.5*
Common wheat	10,252	9,135	1,835	190.6	128.5	319.1
Durum wheat	982	961	261	20.0	18.3	38.3
Barley	3,235	4,567	913	95.3	63.9	159.2
Rye	847	1,151	235	24.0	16.4	40.4
Maize	—	376	69	7.8	4.8	12.6
Subtotal, cereals	*15,316*	*16,190*	*3,313*	*337.7*	*231.9*	*569.6*

[a]This does not allow for the "loss" when stocks are sold from intervention.

[b]Based on the intervention price and a storage period of seven months.

[c]Based on bone-in values.

Source: *AgraEurope*, January 23, 1987.

would have to be undertaken to curb their rapid accumulation. The problems associated with these costly surpluses (see Table 9) spread to other countries as the EC began to dispose of them in foreign markets with the aid of export subsidies.

The need to curb the production of surplus commodities under the EC's Common Agricultural Policy has long been recognized: surplus dairy stocks were creating difficult problems for the EC during the late 1960s and early 1970s.[18] Since that time, the EC has used coresponsibility levies, super levies, threshold production targets, production quotas, acreage set-aside programs, and a variety of other measures in the dairy, cereal, and red meat sectors in an attempt to reduce accumulated stocks and to bring production into line with domestic consumption and normal export opportunities.

Progress on basic reforms of the Common Agricultural Policy has been modest to date, but the EC continues to grapple with the measures required to curb excessive production. While considerable progress appears to have been made in restoring a better market balance in the dairy sector, and some progress has also been made in cutting surpluses in the beef sector, restraints on cereal production have been relatively ineffective.[19]

Many countries, not just the United States and the EC, can be accused of policy-induced production increases. For example, while Japan is a major importer of agricultural commodities, it has tended to encourage domestic production and to discourage consumption through its high internal price supports and a variety of import controls. While the EC is attempting to curb overproduction, it is by no means certain that other countries will accept such production constraints geared to national self-sufficiency requirements.

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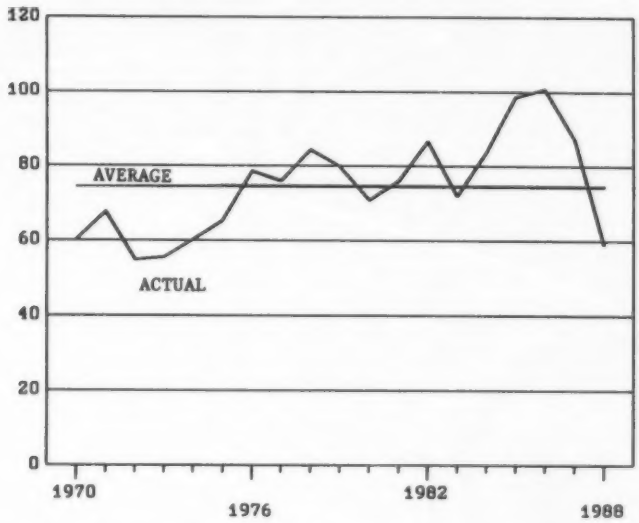
18 E. Neville-Rolfe, *The Politics of Agriculture in the European Community* (London: Policy Studies Institute, 1984), Chapter 10.

19 *AgraEurope*, February 3, 1989.

Figure 17

World Grain Stocks, crop years 1970–71 to 1987–88
(days of consumption, and 18-year average)



Source: United States, Department of Agriculture, Foreign Agriculture Service, *World Grain Situation and Outlook* (Washington, D.C., December 1988).

World Grain Stocks

World grain stocks averaged 20.4 percent of total utilization, or 74.5 days of consumption, during the 1970–88 period (Figure 17). This proportion, however, has varied enormously. Stocks dropped to about 55 days of consumption in 1972–74, a period of world grain shortages and unusually high grain prices, and then dropped again to 59 days in 1988–89, another period of higher world grain prices. By contrast, when grain prices slumped significantly during the 1984-87 period, stocks varied from 84 days to 101 days of consumption.

Significant changes in grain stocks can occur quite rapidly, particularly in the case of coarse grains. Between crop years 1983–84 and 1986–87, total grain stocks increased to 458 million tonnes from 303 million tonnes, resulting in a stock-utilization ratio of approximately 28 percent. For 1988–89, it is estimated that grain stocks will have declined to 270 million tonnes, resulting in a stock-utilization ratio of only 16 percent, the lowest since the early 1970s.

The United States has held by far the largest proportion of world grain stocks. In 1987, for example, it held 46.9 percent of total stocks, compared with 6.3 percent by the EC and 5.2 percent by Canada. During that same year, the United States held almost 31 percent of the world's accumulated wheat stocks. The United States has also idled a significant proportion of its cropland under the acreage reserve program provisions of the *Food Security Act*.

Domestic and International Price Relationships

Many countries provide a level of price support for their grain producers that is well above export prices or prevailing international prices. The example shown in Table 10 compares wheat prices in the EC, the United States, and Canada in March 1987.

In the case of the EC, grain producers were guaranteed an intervention support price of $6.10 per bushel (all prices in this section are in U.S. dollars); in fact, they received an internal EC market price of $6.46 per bushel. Wheat exports to the EC were offered at $1.95 per bushel (the lowest representative offer price at Rotterdam) but could not enter the EC without paying a variable import levy of $6.46 per bushel (the difference between the threshold price of $8.53 per bushel and the representative offer price of $1.95). In the meantime, the EC was exporting wheat at $1.88 per bushel, but EC exporters

Table 10

Domestic and International Price Relationships for Wheat in the European Community, the United States, and Canada, March 1987
(U.S.$ per bushel)

European Community	
Target price	$8.71
Threshold price	$8.53
EC market price	$6.46
Intervention price	$6.10
Lowest representative offer price (Rotterdam)	$1.95
Variable levy[a]	$6.46
Average export price	$1.88
Export refund[b]	$4.58
United States	
Target price	$4.38
Market price[c]	$2.91
Loan rate	$2.28
Canada	
Canadian Wheat Board initial price basis[d]	$2.72

[a]The difference between the threshold price and the lowest representative offer price.

[b]The difference between the EC market price and the average export price.

[c]The price in Kansas City for No. 1, hard winter wheat, containing ordinary protein.

[d]The price in Thunder Bay for No. 1, Canadian Western Red Spring wheat, containing 13 percent protein.

Sources: United States, Department of Agriculture, Economic Research Service, *A Comparison of Agriculture in the United States and the European Community*, Foreign Agricultural Economic Report 223 (Washington, D.C., October 1987), p. 47; Canadian Wheat Board, *Annual Report 1986–87*, p. 21.

received an export refund of $4.58 per bushel (the difference between the purchase price or EC market price of $6.46 per bushel and the export price of $1.88 per bushel).

In the United States, the target price for wheat was set at $4.38 per bushel ($1.72 per bushel below the intervention price in the EC). This is the guaranteed price received by

producers. The nonrecourse loan rate was set at $2.28 per bushel and the market price (at Kansas City) was $2.91 per bushel. The producer received his guaranteed price of $4.38 in two parts: $2.91 per bushel from the marketplace, and the difference between the target price and the market price ($1.40 per bushel) in the form of a direct payment or deficiency price.

In Canada, meanwhile, the producer received a price of $2.72 per bushel (at Thunder Bay) for No. 1 Canadian Western Red Spring wheat, with 13 percent protein, less freight and handling charges. Wheat producers in Western Canada later received supplementary payments (largely because of low world prices) from the *Western Grains Stabilization Act* and the Special Canadian Grains Program.

The primary basis the Canadian Wheat Board uses for setting the initial price for wheat is the international marketplace. In March 1987, the Board's task was complicated by the fact that the world market price was heavily influenced by the U.S. Export Enhancement Program and by the EC's export restitution policy. This meant, in effect, that domestic programs within the United States and the EC provided a high and stable support price, while prices in the international market were considerably lower and much more unstable than the domestic price received by producers.

Wheat producers in countries such as Canada and Australia are fully exposed to the international price whatever the reasons for the prevailing level or the associated instability.

Long-Term Real Prices for Grain

During the past half-century, exceptionally high prices for wheat have occurred in two different periods: during World War II and again during the global grain shortage of the early 1970s. Periods of relatively low prices occurred during the

1930s, the 1950s, from 1967 to 1970, and again during the 1980s.

When the nominal price for wheat is deflated by a farm input price index to provide a set of real prices, it becomes evident that there has been a long-term downward trend in wheat prices. In fact, the real price for Canadian wheat in 1986 was less than 50 percent of that received during the 1930s, as shown in Figure 18.

If historical trends are a reflection of the underlying forces in the marketplace, high prices, such as those which occurred during the early 1970s, should be seen as the periodic exception, not the general tendency. More fundamentally, it appears that — to date at least — increases grain production brought about by technological advances have tended to exceed global consumption increases. The downward trend in real grain prices will be accentuated to the extent that policy-induced production increases continue to be a part of the global grain sector.

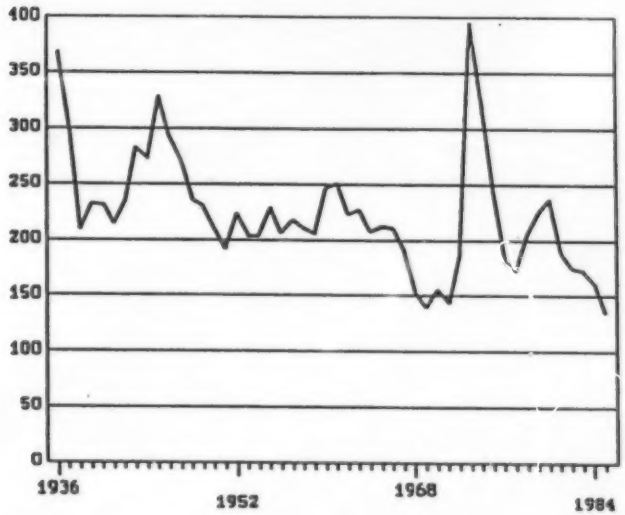
Prospects and Possibilities

The nature and extent of the global demand-supply adjustments that will occur during the next decade will depend heavily on the outcome of the Uruguay Round of GATT negotiations. If little progress is made to liberalize world agricultural trade, one can expect to see a continuation of trade-distorting national programs and an international market dominated by many forms of noncommercial forces and activities. These will include conti[illegible]ing border controls and import restrictions, policy-induced [illegible]rpluses, various forms of subsidized export-enhancement programs, increasing public outlays for national farm programs, and greater price instability in the international marketplace. In other words, the 1990s could result in an extended and accentuated version of the agricultural events and issues that have charac-

Figure 18

Canadian Wheat Prices, 1936-85

(average deflated price received, $ per tonne)



Sources: *Manitoba Agricultural Yearbook, 1986*; and Canadian Wheat Board, *Annual Report*, various issues.

terized much of the 1980s. This is not a pleasant picture to contemplate, but it would be the inevitable result of a global agricultural economy based on economic anarchy.

If the basic objectives of the Uruguay Round are realized, however, one can expect an agricultural industry and trade market more attuned to global demand and supply forces by the end of the century. This is not to suggest that major adjustments can be avoided as the industry moves toward a more market-oriented production, consumption, and trade system. These structural adjustments will indeed be required, to dismantle the many trade-distorting and costly agricultural

policies and programs developed in previous years. But the ultimate result of the adjustments will be a system within which production efficiency and comparative advantage will dictate regional production and trade patterns for agricultural commodities. The drive for national self-sufficiency will be replaced by a greatly enhanced volume of world agricultural trade.

Whatever the outcome of the Uruguay Round, the world demand for food will increase slowly and inexorably in response to the growing world population and rising national incomes. Most of that increased demand will occur in the less-developed regions. There should be little difficulty in meeting that increased demand, however, given the existing excess production capacity in several of the larger developed countries, such as the United States and the EC, and likely developments in the fields of biotechnology and genetic engineering.

If the experience of the past two decades offers any guidance for the foreseeable future, one can expect to see recurring periods of global surpluses and food shortages. Periodic shortages could be particularly acute in regions such as Sub-Saharan Africa. In 1974, the World Food Conference affirmed the need for an internationally coordinated food reserve program. Over 100 countries endorsed the idea, but no concrete action was taken to establish the reserve.[20] Events during the past 15 years indicate, however, that global reserve food stock management could become increasingly important in the future.

Finally, the need to improve the diets of several hundreds of millions of malnourished people in various regions of the world will be a continuing challenge during the last decade of this century. In the final analysis, the problem will be resolved not by food aid but by long-term economic development

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20 World Hunger Project, *Ending Hunger*, pp. 156–168.

programs in the afflicted regions. The success of these programs, in turn, will depend heavily on a more liberal trading system for the world agricultural sector.

4

National Agricultural Policies and the Implications for Trade

Discussion in this chapter focuses on national agricultural policies in the less-developed countries, in the Soviet Union and China, and in the developed countries. During the past two decades, agricultural trade policies, particularly those of the developed countries, have been largely shaped by, and, in many instances, have represented a direct extension of, national agricultural policies. Accordingly, major trade reform requires a significant change in these existing national policies.

Agricultural Developments in the Less-Developed Countries

Because the agricultural sector is such a dominant part of the economy in most of the less-developed countries (LDCs), overall economic growth and development in those countries depends heavily on the prosperity of their farmers.

In the early stages of economic development, the industrial, manufacturing, and service sectors depend on the transfer of labor and capital in the form of savings from the

rural sector. Agricultural development, in turn, is influenced not only by specific domestic agricultural policies and programs, but also by national monetary, fiscal, exchange-rate, and trade policies. Highly positive initiatives for agricultural development can be offset completely by general taxation, food pricing, and other macroeconomic policies. Finally, agricultural development in most LDCs is heavily influenced by world market conditions and by the national agricultural and trade policies of the developed countries.

General Economic Structure of the Less-Developed Countries

Nearly half of the world's population resides in the LDCs. The population density in many of these countries is enormous: about 75 persons per square kilometer, on average, compared with 23 for the developed countries. Currently, around 70 percent of the labor force in the LDCs works in agriculture, compared with only 7 percent in the developed countries.

In 1984, the gross national product in the LDCs amounted to an average of U.S.$260, compared with U.S.$11,430 in the developed countries.[1] During the same year, only about 36 percent of the LDCs' gross domestic product accrued to the agricultural sector. About one-third of exports from the LDCs during the 1982–84 period came from the agricultural sector, compared with 14 percent for the developed countries.

While agriculture dominates the economies of the LDCs, the degree to which the agricultural sector can contribute to general economic growth is based on the productivity, general growth rate, and level of prosperity of the rural sector. The transfer of "savings" from agriculture to the urban, industrial sector, whether in the form of taxation of farmers, low agricul-

1 World Bank, *World Development Report* (New York: Oxford University Press, 1986).

tural prices, or an overvalued exchange rate, can have a crippling effect on an already depressed rural economy.

Given the fact that a substantial part of the exports from LDCs comes from agriculture, it is clear that one of the best sources of support for the industrial development of these countries will be a trade-driven form of prosperity for their agricultural producers. The outcome of the talks on agriculture in the Uruguay Round of negotiations under the General Agreement on Tariffs and Trade (GATT) thus will be of critical importance to the LDCs.

Current Problems and Issues

The current problems and issues relating to agriculture in the majority of LDCs may be summarized as follows:

- Low productivity and highly variable agricultural production exist in some countries; part of this problem has been due to adverse climatic conditions and part due to ineffective or misguided domestic agricultural policies.
- Increasing population pressure on limited agricultural resources has led to an exploitative system of farming not sustainable in the longer term.
- The populations of LDCs suffer from an inadequate diet, chronic malnutrition, and, in some countries, widespread starvation and hunger from time to time.
- Infrastructure to support agricultural production and distribution of food supplies is inadequate — for example, a lack of research, education, and extension services; inadequate storage, marketing, and transportation facilities; lack of adequate credit facilities; and inadequate supplies of strategic production inputs such as chemical fertilizers, pesticides, herbicides, and irrigation water.
- Water and soil resources are being degraded.

- Export markets and international prices for agricultural commodities are unstable.
- Uncertain and adverse changes are occurring in exchange rates, and in policies bearing on exchange rates.

One of the more serious issues overhanging many LDCs is the external debt problem. Total external debt held by LDCs in 1985 amounted to U.S.$1.23 trillion: $195.5 billion in Africa, $312.4 billion in Asia, and $410.7 billion in the Western Hemisphere — mainly in Central and South America (see Figure 19). Debt-service payments as a percent of exports of goods and services amounted to 26.6 percent for Africa and 42.1 percent for the debtor countries in Central and South America.[2] Interest payments of this magnitude are not only extremely burdensome to the countries involved, but they also impose severe restrictions and distortions on their economic sectors, including agriculture.

Whether many of these external debts are illiquid or insolvent, there is little question that the debt crisis will be resolved only by increasingly stringent national monetary and fiscal policies, by a global trade policy that includes the LDCs as an integral part of a liberalized trading arrangement, and, perhaps, by rescheduling or writing off a considerable part of the external debt.

National Agricultural Policies

Space does not permit a comprehensive assessment of the different policies and programs that LDCs have adopted to

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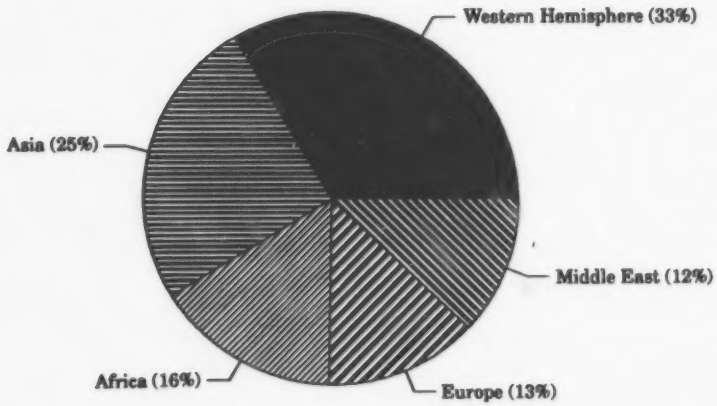
2 Ibid. See also International Monetary Fund, *Supplement on Sub-Saharan, African Debt*, June 1988; and United States, Department of Agriculture, Economic Research Service, "Debt Still Overhangs Third World Economies," *Agricultural Outlook* (Washington, D.C., September 1987).

Figure 19

Regional Proportions of Total External Debt Held by the Less-Developed Countries, 1985



Sources: World Bank, *World Development Report* (New York: Oxford University Press, 1987); and United States, Department of Agriculture, Economic Research Service "Debt Still Overhangs Third World Economies," *Agricultural Outlook* (Washington, D.C., July 1987).

cope with their particular national agricultural problems. A few general observations can be made, however, about both the successes and failures of their agricultural policies in recent years.

Most of these policies have supported the objectives of increased agricultural productivity, improved food-consumption standards, and higher rural incomes. Many LDCs have allocated scarce national resources to agricultural programs designed to achieve these objectives. In addition, during the past two decades, considerable foreign aid in various forms has been extended to LDCs to assist them with their agricul-

tural development objectives. The best example of this type of complementary relationship between national policies and international aid has been the spread of the "green revolution" in countries such as Mexico, India, and Pakistan. The success of these programs has been reflected in substantial increases in agricultural production.

Despite the significant progress that many LDCs have made in increasing agricultural productivity, macroeconomic policies and other national programs in other LDCs have come into serious conflict with their declared national policies and priorities relating to agriculture. The World Bank outlined some of these conflicts in its 1986 *World Development Report*:

- Some LDCs impose taxes on agricultural exports while complaining about the adverse impact of low farm prices on the farm sector.
- Some LDCs pay their producers considerably less than world prices for grain and then spend scarce foreign exchange to import food.
- Many LDCs subsidize the prices or production inputs of their agricultural producers and then tax away these gains through various macroeconomic policies or through overvalued currencies.
- Many LDCs subsidize food consumers through lower domestic food prices, thus reducing the incomes of many farmers who are poorer than the subsidized urban consumers.

Clearly, national policies within the LDCs must be consistent with the announced objectives for agricultural development if international aid programs and multilateral trade policies are to be of maximum support to their overall development objectives.

The Impact of Developed Countries' Agricultural Policies on the LDCs[3]

The biggest impact of the developed countries' agricultural policies on the LDCs arises from the "spillover" effect of actions the developed countries have taken to solve their own domestic agricultural problems. These actions include various forms of import protection and a variety of export-enhancement or subsidy policies.

The impact of agricultural protectionism and input controls in the developed countries varies tremendously among LDCs. Thailand, for example, a heavy exporter of rice and cassava, is extremely vulnerable to the effects of U.S. domestic rice-pricing policies and to European Community (EC) policies that discourage the import of feed "substitutes" such as cassava. Thailand and other producers also have had to sign voluntary export restraint agreements with the EC.

Similarly, LDCs that produce cane sugar are sensitive to U.S. and EC import restrictions designed to protect domestic beet sugar and corn sweetener (fructose) industries. As another example, the EC's highly subsidized oilseed sectors (rapeseed and olive production) are in increasing conflict with the competing vegetable oils (palm oil, peanut oil) imported from many LDCs.

The growing use of export subsidies and various forms of export-enhancement programs by the developed countries — to dispose of surplus agricultural products — not only competes directly with domestic production in many of the LDCs, but can be an extremely destabilizing force on world prices and markets for products that the LDCs export.

The developed countries' monetary, fiscal, and exchange-rate policies can also have an enormous impact on agriculture in the LDCs.

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3 The discussion in this section draws on World Bank, *World Development Report*, pp. 123–132.

There is no question that the way in which the LDCs will be dealt with in the Uruguay Round will be extremely critical from the standpoint of the future development of those countries.

The LDCs and the Multilateral Trade Negotiations

The developed countries have long accepted that LDCs should be accorded exceptional treatment, primarily by way of special concessions, under multilateral trading agreements.[4] The general objective of this "special and differential" treatment is to use, insofar as is possible, the benefits of trade liberalization to promote the growth, development, and trade of the LDCs. These special concessions have been extended once again in the Uruguay Round of multilateral trade negotiations.

The Ministerial Declaration of the Uruguay Round includes in its statement of general principles a commitment that,

> the principle of differential and more favorable treatment embodied in Part IV and other relevant provisions of the General Agreement and in the Decision of the Contracting Parties of 28 November 1979, on Differential and More Favorable Treatment, Reciprocity and Fuller Participation of Developing countries applies to the negotiations.[5]

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4 See General Agreement on Tariffs and Trade, "Differential and More Favorable Treatment, Reciprocity and Fuller Participation of Developing Countries," Decision of November 28, 1979, in *Agreement Relating to the Framework for the Conduct of International Trade* (Geneva, 1979). See also M. Wolf, "Differential and More Favorable Treatment of Developing Countries and the International Trade System," *World Bank Economic Review* 1 (September 1987): 647–668.

5 General Agreement on Tariffs and Trade, *Ministerial Declaration on the Uruguay Round* (Geneva, September 1986).

This general statement provides that actions taken to implement the standstill and rollback commitments — that is, commitments to freeze and reduce trade-distorting measures — of the General Declaration should avoid disruptive effects on the trade of the LDCs. A further provision indicates that developed countries should not expect reciprocity for commitments they make in trade negotiations to reduce or remove tariffs and other barriers to the trade of the LDCs.

In recent years, differences of opinion have emerged as to whether the LDCs would gain more from a continuation of special and differential treatment under the GATT or from becoming more fully integrated into the multilateral trade arrangements.[6] Evidence suggests that special treatment may not have produced the results expected. Furthermore, several recent studies have estimated that greater liberalization of trade could produce net gains for the agricultural sector in many LDCs.[7] Other LDCs, however, could be losers, particularly those that have developed national policies to protect domestic industry and to subsidize food consumers at the expense of the farm sector.

In general, global liberalization of agricultural trade will require substantial changes in existing national agricultural policies. It will not be easy to make such changes in many of the LDCs, however, even if it could be demonstrated that those countries stand to achieve a net gain. A tradeoff between consumers and taxpayers on the one hand and agricultural producers on the other, in the interest of world trade liberalization, could involve some wrenching economic, social, and political changes, changes that many countries may be unwilling or unable to undertake.

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6 "Multilateral Trade Negotiations and the Developing Country Interests," *World Bank Economic Review* 1 (September 1987).

7 See, for example, R. Tyers, and K. Anderson, "Liberalizing OECD Agricultural Polices in the Uruguay Round: Effects on Trade and Welfare," *Journal of Agricultural Economics* 39 (May 1988).

The GATT negotiations are only one part of the overall framework required for the development of policies for the LDCs. Trade policies must be closely integrated with the development policies of the World Bank and with the monetary, fiscal, and lending policies of the International Monetary Fund.

Never has the need been more urgent for some form of trade-driven prosperity for the LDCs, nor have the opportunities been greater for the discussion and development of the means for bringing these countries more fully into the multilateral trade negotiations. But these expanding opportunities will also impose greater obligations on the LDCs to bring their national policies more in line with the requirements of a liberalized world trading arrangement.

Agricultural Developments in the Soviet Union and China

Agricultural developments in the Soviet Union and China have had, and will continue to have, an enormous influence on world trade in grain products. These two countries combined have imported anywhere from 25 to 30 percent of the world's wheat and coarse grain exports during the past three years. They are Canada's largest customers for wheat, importing from 45 to 50 percent of this country's total wheat exports in recent years.

Accordingly, the outcome of economic reforms now under way in both the Soviet Union and China, while still uncertain, will have significant implications for the domestic agricultural and trade policies of Canada and other major exporting countries for many years to come.

Soviet General Secretary Mikhail Gorbachev refers to *perestroika* (restructuring) and *glasnost* (openness) as essential parts of what he calls the "second revolution." Chinese leader Deng Xiaoping speaks of *gai ge* (reform) and *kai fung*

(opening up) as the essential aspects of the economic revolution under way in his country.[8]

Economic reforms in the two countries represent a shift of emphasis from a centrally planned, collectivist mode of operation toward a more decentralized and locally responsive economic system. Both Gorbachev and Deng explain, however, that the reforms are consistent with Marxist-Leninist principles of socialism. Gorbachev refers to the shift as greater emphasis on "democratic centralism," and Deng insists that China's reform is based on the "primary level of socialism." The fact that both leaders are at pains to emphasize that there is a connection between the current economic reforms and Marxist-Leninist principles indicates the sensitivity of the balance between traditional, conservative forces and reform-minded influences in the two countries.

Whatever the labels, both the Soviet Union and China have made it clear that increased agricultural productivity and improved consumer diets are two of the most important objectives of the reforms. The goals are clear, but the means and possibilities of achieving them are still in a developmental stage.

Agriculture in the Soviet Union

The Evolution of Policies and Programs

Many experts contend that the Soviet Union has always had the land resources and potential capacity to be more than self-sufficient in food production. The fact that this potential has not been reached has been due to a number of political and economic factors.

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8 See M. Gorbachev, *Perestroika, New Thinking for Our Country and the World* (New York: Harper and Row, 1987); and "Two Crossroads of Reform," *Time*, November 9, 1987.

While the Russian Empire's feudal system of agriculture was abolished officially in 1861, it was really not until 1906 that the majority of peasants were able to obtain legal title to land. By the end of the 1920s, agriculture in the new Soviet state consisted of 20 million small family farms. Under Stalin, the family farms were forcibly replaced with a centrally planned, collectivist form of agriculture: the collective — cooperative — farm or *kolkhoz*, and the state farm or *sovkhoz*. These two forms of production organization, with major modifications from time to time, have continued to the present day.[9]

In an attempt to increase agricultural productivity, the Communist Party, under Khrushchev, developed the "New Lands" policy during the 1950s. The opening up of virgin lands in Kazakhstan and Siberia did lead to a dramatic increase in agricultural production, but this production was highly variable because of climatic conditions and inherent limitations of the agricultural system.

Soviet agriculture subsequently stagnated during the Brezhnev period. Before Brezhnev's death in 1983, plans were being developed for a major diversion of northward-flowing water from Siberia to the established agricultural areas in the south, where it was hoped that productivity could be greatly enhanced through irrigation. This project was subsequently cancelled when Gorbachev came to power in 1983.

Throughout the period from the 1950s to the late 1970s, various policies and programs were developed in the attempt to boost agricultural productivity. These programs included: payment of bonuses and higher wages to workers on the collective and state farms; establishment of "Machine Tractor

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9 See V. Medish, *The Soviet Union*, 3rd ed. (Englewood Cliffs, N.J.: Prentice-Hall, 1987); G. Hosking, *A History of the Soviet Union* (London: Fontana Press/Collins, 1985); and "The Future Role of the Soviet Union in the International Food Market," *AgraEurope*, Special Report 36 (London, July 1987).

Stations", the purpose of which was to decentralize control and responsibility; support and encouragement of "private plots" for individual members of the *kolkhoz* and *sovkhoz*; and greater allocation of funds to the collective and state farms for investment in agricultural production.

While some important gains in agricultural productivity were achieved, the resulting productivity was highly variable, and the overall results continued to fall far short of centrally planned targets and objectives.

Soviet Agricultural Performance

Until 1971, Soviet grain production grew steadily and exceeded consumption, partly due to the expansion of agricultural land during the Khrushchev years. Since 1971, however, as Figure 20 shows, grain production has varied tremendously, and has fallen below consumption consistently since 1978.[10]

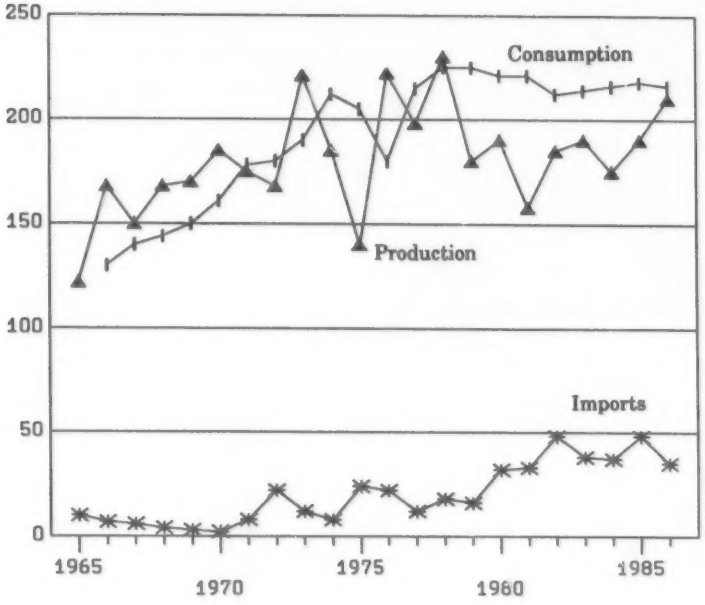
The highly variable yields can be explained in part by the influence of highly variable climatic and management conditions in the New Lands areas of Kazakhstan and Siberia. Indeed, the apparent decline in yields after 1978 would appear to be associated, in part at least, with declining productivity in the New Lands.

The shortfall between production and consumption during the 1980s has been covered by major imports of wheat and feed grains, as shown in Table 11. During the past seven years, imports of all grains have varied from a low of 29.9 million tonnes in 1985-86 to a high of 55.5 million tonnes in 1984–85, in which year imports constituted 25.3 percent of the total national utilization of grain. The size and variability of these Soviet grain imports have been major destabilizing factors in world agricultural trade markets.

10 Oilseeds, another important Soviet crop, also has shown relatively little increase in production during the past two decades.

Figure 20

Soviet Grain Production, Consumption, and Imports, 1965–86
(millions of tonnes)



Source: "The Future Role of the Soviet Union in the International Food Market Place," *AgraEurope*, Special Report 36 (London, July 1987).

In recent years, the Soviet Union has made a major commitment to improve food consumers' diets primarily through increasing the production and availability of meat, dairy, and poultry products. Production has not been sufficient, however, to meet consumption requirements, so major quantities of these products have had to be imported, as shown in Table 12.

Table 11

Supply and Use of Grain
In the Soviet Union, crop years 1981–82 to 1987–88
(millions of tonnes)

Crop year	Production	Imports	Total utilization	Imports as % of total utilization
1981–82	158.2	47.3	211	22.4%
1982–83	186.8	34.3	213	16.1
1983–84	192.2	32.5	218	14.9
1984–85	172.6	55.5	219	25.3
1985–86	191.7	29.9	218	13.7
1986–87	210.1	30.0	229	13.1
1987–88	195.0	36.0	228	15.8

Source: United States, Department of Agriculture, Economic Research Service, *USSR Situation and Outlook Report* (May 1987), p. 18.

In common with other developed countries, the Soviet Union has increased its subsidies to agriculture significantly in recent years, as shown in Table 13. Most of these expenditures have been paid as direct subsidies at the production level and in the form of retail price subsidies. Unlike in other developed countries, however, where agricultural subsidies have led to surplus production, the payment of agricultural subsidies in the Soviet Union does not appear to have provoked the same supply response.

There can be little question of the importance of the Soviet market for North American grain producers. As Table 14 shows, Canada has exported between 5 and 7 million tonnes of wheat annually to the Soviet Union in recent years. The United States and the EC have also exported increasing amounts of grain to the Soviet Union, much of which, in 1987 and 1988, was supported by grain export subsidies. The United States increasingly has used its export-enhancement program to compete directly with the EC, which provides ex-

Table 12

Principal Soviet Agricultural Imports, 1984 and 1986
(thousands of tonnes)

Commodity	1984	1986
Meat and meat products[a]	805	936
Shell eggs[b]	451	387
Butter	198	194
Wool, scoured[c]	90	115
Vegetables, fresh	158	271
Vegetables, canned	445	464
Fruit, fresh	1,100	1,269
Fruit, dried	103	91
Sugar, raw	4,972	5,158
Sugar, refined	732	23
Coffee	48	39
Cocoa beans	150	163
Tea	95	110
Tobacco	103	67
Cotton lint	166	88
Oilseeds	696	2,124
Oilseed meal[c]	325	375
Vegetable oil, edible	766	530

[a]Does not include live animals.

[b]Millions of pieces.

[c]Estimate.

Source: United States, Department of Agriculture, Economic Research Service, *USSR Agriculture and Trade Report* (May 1988), p. 33.

port subsidies not only for grain exports but also for major exports of other farm products such as beef and butter.

The Prospects for Soviet Agriculture

The Soviet Union now acknowledges the recent failures of its agricultural sector, and it is clear that *perestroika* is aimed as much at agriculture as at any other sector. General Secretary Gorbachev recognizes that it will not be possible to bring about an improvement in food-consumption standards

Table 13

State Subsidies for Agriculture in the Soviet Union, 1971–85
(billions of rubles)[a]

Item	1971–75	1976–80	1983	1985
	(annual average)			
Direct subsidies	15.4	24.2	37.0	n/a
of which state expenditures for irrigation, drainage, soil treatment, etc.	4.4[b]	5.5[b]	7.6	8.3[c]
Retail price subsidies	17.2	24.2	54.6[d]	n/a
Input subsidies[e]	1.4	2.8	4.2	n/a
Total subsidies	*34.0*	*51.2*	*95.8*	*n/a*
Increase of long-term bank credit	3.0	4.0	2.5	n/a
Long-term credit forgiven by state	n/a	n/a	2.4	2.5
Losses on imports	n/a	n/a	n/a	n/a

n/a = not available.

[a]1 ruble equalled approximately U.S.$1.50 in 1987.

[b]Includes only new irrigation and drainage construction.

[c]Estimated.

[d]Includes bonuses of 9.4 billion rubles for low-profit and unprofitable farms, introduced on January 1, 1983.

[e]Includes mineral fertilizer, machinery, and, for 1978–82, gasoline.

Source: United States, Department of Agriculture, Economic Research Service, *World Agriculture* (September 1987), p. 26.

as long as much of the grain needed for livestock production must be imported.

Just what direction will Soviet agriculture take in the foreseeable future? Clearly, the Soviets have rejected any new grandiose schemes, such as the diversion of water from Siberia for irrigation purposes or the development of "New Lands". It is also clear that when Gorbachev refers to the need for more decentralization of responsibility and accountability in agriculture, he does not mean the development of a comprehensive market price system. For him, "democratic

Table 14

Canadian and U.S. Grain Exports to the Soviet Union, crop years 1976–77 to 1986–87
(millions of tonnes)

	United States		Canada	
Crop year	**Wheat**	**Corn**	**Wheat**	**Barley**
1976–77	3.1	3.0	1.0	0.1
1977–78	3.5	11.1	2.1	0.2
1978–79	4.0	11.5	1.4	0.1
1979–80	2.2	5.8	2.6	0.9
1980–81	3.8	5.7	4.0	1.6
1981–82	6.1	7.8	5.0	2.8
1982–83	3.0	3.2	7.0	1.5
1983–84	7.6	6.5	6.8	0.5
1984–85	2.9	15.8	6.0	0.4
1985–86	0.2	6.8	5.2	0.4
1986–87	1.0	3.6	5.4	2.1

Sources: United States, Department of Agriculture, Economic Research Service, *USSR Situation and Outlook Report* (May 1987); Canadian Wheat Board, *Annual Report*, various issues.

centralism" is a means of simplifying and streamlining the present bureaucratic and central management apparatus and of making the apparatus more responsive at the local level.

Perestroika, then, as it applies to agriculture, would appear to encompass the following:[11]

- the greater use of "intensive technology" on the present land base, and in the present livestock and poultry operations;
- the shift of responsibility for decisionmaking on operational matters from the central management apparatus to the local units of production — the collective and state farms;

11 See United States, Department of Agriculture, Economic Research Service, *USSR Agriculture and Trade Report* (May 1988); and "The Future Role of the Soviet Union in the International Food Market," *AgraEurope*.

- incentives at the local level to encourage greater initiative — for example, self-financing, which means that each local unit should stand or fall on the revenue it generates;
- marginal adjustments in the system, which would permit the local collective farmer and state farms to "market" any production in excess of that contracted with the state;
- greater effort to link the agricultural input industries (fertilizers, machinery, pesticides, credit) with the agricultural production sectors — for example, to provide increasing freedom for a local collective or state farm to contract directly with the fertilizer or machinery sectors for supplies and services, rather than having the central planning bureaucracy be responsible for such allocations at the local level;
- reduction of retail food subsidies and greater reliance on cost accounting as the basis for setting meaningful wholesale and retail prices for food; and
- recent proposals to make farmers "masters of the land" by permitting them to lease land and equipment for periods of up to 50 years.

These reforms are extremely ambitious from both a political and an economic point of view. Whether they can be sustained politically and whether they represent meaningful and effective ways of achieving the goals set for agriculture cannot be assessed at this time with any degree of confidence.

It would appear that the pressure for increased livestock and poultry production has been one of the main reasons for the present level of grain imports. Clearly, current Soviet grain production is not sufficient to permit the projected increase in the consumption of meat, dairy, and poultry products. Estimates suggest that the Soviet Union would need to produce as much as 250 million tonnes of grain annually to be self-sufficient and to support livestock, dairy, and poultry

production sufficient to provide consumption standards approaching the level of that in the EC.

Yet, Soviet grain production in recent years has fallen far short of these requirements, averaging just 180 million tonnes during the 1981–85 period and reaching a high of only 211 million tonnes in 1987. Clearly, a target of 250 million tonnes by, say, 1995, is a daunting task. Several outcomes are possible:

- with a 2 percent annual increase in productivity, the Soviet Union would still require annual grain imports in the region of 25 to 40 million tonnes up to the mid-1990s;
- with a 4 percent annual increase in productivity, the Soviet Union could be self-sufficient in grain after the mid-1990s;
- with little increase in grain production, and with an inability to import anything beyond 25 million tonnes annually, there would be little if any increase in the consumption of meat, dairy, and poultry products.

It is impossible, of course, to predict how large Soviet grain imports might be by the mid-1990s, mainly because one cannot anticipate which of these outcomes will prevail. A recent analysis of the prospects for success of Soviet agricultural reforms suggests that many problems remain to be resolved:

> Though agreement exists in the Soviet Union on the need for change in planning and management of agriculture, that consensus breaks down very quickly after moving beyond generalities. At this point, the prospects for realizing the more radical interpretations of reform are seriously in doubt.[12]

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12 United States, Department of Agriculture, *USSR Agriculture and Trade Report*.

Some observers suggest that it may require at least another 20 years to achieve the transformation Gorbachev seeks.[13]

There is no question that Canada, as a major grain exporter, has a vital interest in the final results of Gorbachev's *perestroika*. The probability is high, however, that the Soviet Union will continue to be a major grain importer throughout the 1990s.

Agriculture in China

The Evolution of Policies and Programs

Following the establishment of the People's Republic of China in 1949, the Chinese Communist Party (CCP) undertook a major reform in the countryside. The reform had two major goals: to destroy the traditional ruling order in the countryside — that is, to strip the old elite, the landlords, of their power, wealth, and land, and to transfer that land to the peasants; and to build a new power structure based on village peasant associations, combined with more central control by the CCP.[14]

The history of Chinese agriculture since 1953 can be divided into six major periods in terms of overall government policies and the development of production systems:[15]

- 1953–57: the formation of agricultural producer cooperatives;

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13 "Russia's Last Chance," *The Economist*, March 11, 1989, pp. 85–86.

14 See E.E. Moise, *Modern China* (London: Longman, 1986), pp. 126*ff*; and M. Blecher, *China, Politics, Economics and Society* (London: Frances Pinter, 1986).

15 See Organisation for Economic Co-operation and Development, *Agriculture in China* (Paris, 1985), pp. 17*ff*; R.C. Hsu, *Food for One Billion* (Boulder, Col.: Westview Press, 1982), pp. 31–50; and World Bank, *China: Long-Term Issues and Options* (Washington D.C., 1985).

- 1958–60: the formation of people's communes and a subsequent decline in agricultural production, largely due to adverse climatic conditions;
- 1961–65: the recovery of production through policy changes;
- 1966–76: a strengthening of the collective economy as a result of the "Cultural Revolution";
- 1977–78: the post-Mao "Modernization Drive"; and
- 1979 to the present: the transition of agriculture to private management — that is, the development of the family farm responsibility system.

During the 1953–57 period, the CCP launched a policy to develop and encourage collective agricultural production in three stages: mutual-aid teams, collective associations, and advanced producer cooperatives. The typical advanced cooperative consisted of approximately 160 farms, each 140–160 hectares in size.

From 1958 to 1960, the CCP organized the countryside into communes that involved not only farm production but rural industrialization as well. Each commune initially consisted of about 5,000 farms and 4,500 hectares of arable land. The development of large communes, however, led to a rapid reduction in agricultural production. In an attempt to correct this situation, the CCP then developed a three-tier system of ownership and operation, consisting of production teams, production brigades, and the communes.

During the 1961–65 period, responsibility for production was assigned to individual farms, and production recovered. During the Cultural Revolution of the late 1960s and the era of the "Gang of Four" during the first part of the 1970s, the CCP had second thoughts about the trend toward individual responsibility in the rural economy, and began to emphasize the need to move toward strengthening the communes, under which the brigade served as the basic economic unit.

Since 1979, Chinese agriculture has been characterized by the development of policies directly opposite to those of the 1966–76 period. The CCP has placed increasing responsibility for agricultural production on the family farm, and has also allowed substantial increases in the prices of farm products. This reform has led to improved management practices and, consequently, to spectacular production increases, particularly in 1982 and 1983.

Chinese Agricultural Performance

Chinese grain production has varied considerably over the past 40 years, the most disastrous period occurring between 1957 and 1960, when the people's communes were being formed. Since 1960, however, productivity has surged, with the exception of declines during the early part of the Cultural Revolution in the 1960s and a brief period at the end of the 1970s. Much of this increase has come about as a result of irrigation and multiple cropping of land. In 1987, for example, it is estimated that one and a half crops were harvested from the available arable land.

Since 1976, there has also been a spectacular increase in the production of oil-bearing crops. This increase has resulted from both an increase in area sown and in productivity per hectare. and while rice continues to be the dominant crop, there has also been a significant increase in wheat production in recent years. The most important feed grain is corn.

Since 1969, China has placed increasing emphasis on meat production as a way to improve food-consumption standards. Pigs are by far the most important source of red meat in China, and pig production increased by almost 190 percent between 1969 and 1979. Between 1977 and 1983, total meat production (pork, beef, and mutton) almost doubled.

The improvement in Chinese agricultural productivity has not come without considerable cost. Between 1978 and

1984, for example, total state expenditures on agricultural subsidies increased fourfold (see Table 15). Most of these subsidies were allocated to the support of retail prices for food, and the remainder was spent on various forms of production inputs and services.

While China has long been an importer of grain products, particularly wheat, the largest imports have occurred since 1975. Between 1977 and 1986, total grain imports by China have ranged from just under 6 million to over 15 million tonnes per year (see Table 16).

Canada has been the largest, most consistent supplier of wheat to China, although the United States occasionally has dominated the market. In 1985, for example, Canada provided more than 41 percent of all grains, predominantly wheat, that China imported. There can be little doubt about the continuing importance of the Chinese market for Canadian wheat exporters. During the 1980–86 period, over 17 percent of Canada's total wheat exports went to China. Only the Soviet Union is a bigger market.

The Prospects for Chinese Agriculture

Food will continue to be the focal point for concern among those responsible for the success of economic reforms in China. The success of past reforms has been measured in terms of the greater availability of food, particularly for urban consumers. Yet, in spite of the dramatic increases in productivity since the mid-1970s, expenditures on food continue to claim a high proportion — 60 percent — of the Chinese consumer's income. And the reforms are not without difficulties, as evidenced by the rationing of pork and sugar supplies in a number of cities in late 1987.

In assessing the prospects for agricultural development in China during the foreseeable future, several considerations and realities must be recognized.

Table 15

State Subsidies for Agriculture in China, 1978-84
(millions of yuan)[a]

	1978	1979	1980	1981	1982	1983	1984
Subsidies to cover the difference between the cost of imported grain, cotton, sugar, fertilizer, agricultural chemicals and retail prices	1,435	2,290	4,310	8,826	5,679	5,868	4,100
Subsidies to support the purchase of agricultural inputs	2,391	2,179	2,041	2,174	2,135	1,346	815
Subsidies to stabilize retail prices	5,560	13,602	17,856	21,772	24,022	26,952	32,085
Total subsidies	*9,386*	*18,071*	*24,207*	*32,772*	*31,836*	*34,166*	*37,000*

[a]In 1986, U.S.$1.00 averaged 3.4528 yuan.

Source: United States, Department of Agriculture, Economic Research Service, *China Situation and Outlook* (July 1987), p. 15.

First, China has one of the highest land-population densities in the world. Close to 800 million peasants must share 100 million hectares of arable land, leaving each peasant with about 0.12 hectares of land. In Canada, by contrast, farms average 104 hectares in size.

Second, although the rate of increase in China's population growth has slowed considerably in recent years, 15 million people are added each year.

Much of the increased agricultural productivity during the past decade has been based on factors that are beginning to show some limitations. In 1978, a major reform was launched that, in effect, stripped the communes and their officials of central decisionmaking power and transferred it to individual households in the form of the family farm responsibility sys-

Table 16

Chinese Grain Imports, 1977–86

(thousands of U.S. tons)

	Wheat		Coarse grains		Total grains	
	Total imports	From Canada	Total imports	From Canada	Total imports	From Canada
1977	6,838	3,003	0	0	6,838	3,003
1978	7,985	3,275	1,324	0	9,309	3,275
1978	11,792	2,627	1,828	0	13,638	2,627
1981	12,691	3,065	712	77	13,511	3,142
1982	13,258	3,526	1,967	0	15,546	3,526
1983	11,375	4,659	1,675	83	13,086	4,742
1984	9,608	3,187	134	26	9,742	3,213
1985	5,599	2,370	137	0	5,713	2,370
1986	5,745	2,310	1,062	378	6,807	2,688

Sources: United States, Department of Agriculture, World Agriculture Regional Supplement, *China Review of 1983 and China Outlook for 1984* (Washington, D.C., 1984); and idem, *China: Agriculture and Trade Report* (June 1988).

tem. While individual farmers do not own the land, they have been permitted to rent under a contract for up to 15 years. It is now apparent that the small farms that were created as a result of this policy are unable to adopt appropriate agricultural technology.

During the 1980–85 period, the state greatly increased prices for all crops. Farmers were obliged to contract with the state for part of their production at a fixed price, and were able to sell the remainder in the marketplace. Because grain prices fixed by the state were too low relative to prices for other commodities sold in the marketplace, farmers have tended to divert their resources to the production of free-market vegetables and other such crops, and to "sideline" activities such as pork and poultry production. The result has been that grain yields have fallen while the production of free-market and sideline crops has boomed.

Much of the green revolution in China during the past ten years has been based on irrigation, multiple cropping, and production-intensive technologies such as the use of fertilizers. Given China's relatively fixed land base, it should not be surprising if the further use of these techniques resulted in diminishing returns. Thus, China may be approaching the limits of its productive capacity in agriculture.[16]

China has set a grain production target of 500 million tonnes for the end of the century — an ambitious target when one considers that the record harvest so far is 407 million tonnes (in 1984), and that harvests in 1985 and 1986 were 379 million and 391 million tonnes, respectively. The World Bank suggests that a more realistic target is 480 million tonnes.[17]

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16 See "A Survey of China's Economy," *The Economist*, August 1, 1987; "China Beyond the Wall," *The Economist*, September 12, 1987; United States, Department of Agriculture, Economic Research Service, *China: Situation and Outlook Report* (Washington, D.C., July 1987); and J. Rusk, "China Struggles to Forge Farm Policy for the '90's," *Globe and Mail* (Toronto), February 4 and February 5, 1988.

17 World Bank, *China: Long-Term Issues and Options*, p. 27.

Grain production did climb back to 400 million tonnes in 1987, but China imported a near-record 15 million tonnes of grain and record amounts of edible oil during the same year. Since then, the price level at which the state will buy grain, edible oil, and sugar has been increased to encourage production and lessen the shortages that have emerged for these commodities. But the amount by which China is apparently able to raise these prices is limited, either because of consumer resistance or because of the massive state subsidies required if food prices are to be kept at relatively low levels.

China has achieved remarkable productivity increases in agriculture since 1978. It appears, however, that China will find it increasingly difficult to maintain similar increases in the foreseeable future. Accordingly, there is a growing probability that China will continue to be a major importer of grain products and edible oils with positive implications for Canadian exporters. It is conceivable that China could be importing somewhere between 20 million and 30 million tonnes of grain by 2000, compared with imports of 6 million to 15 million tonnes during the 1980s. Adverse climatic conditions and the growing pressure in the urban sector for increased supply of red meat and poultry products, could add still further pressure on available grain supplies and boost imports even higher.

Agricultural Policies in the Developed Countries

While geography, domestic market size, political traditions, and economic and social institutions all play a part in shaping a country's agricultural policies, most of the developed countries have adopted similar policies to achieve common objectives for their respective agricultural industries. Clearly, however, governments in all of these countries have become involved, to one degree or another, in

the development and economic support of their agricultural and food sectors.

Policy Objectives[18]

All of the developed countries appear to share certain objectives in common in the development of their policies toward the agricultural sector:

- food security;
- price and income stabilization;
- enhancement of prices and incomes;
- agricultural productivity and development;
- consumer interests — a dependable supply of nutritious foods at reasonable prices; and
- national and regional development.

While food security has not tended to be a high-priority objective in most of the surplus-producing countries, it has been predominant in food-deficit countries. There is little question that when the European Economic Community was formed in 1957, food security was an extremely important objective, given the acute food shortages that had occurred during the ravages of World War II. It is also an important policy objective in Japan, which is not surprising when one considers that Japan is so heavily dependent on food imports. Even the United States, one of the larger surplus-producing countries, imposed export embargoes on certain agricultural products during the global food scare in the early 1970s, although the U.S. action was not based on the fear of an im-

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18 The discussion in this section draws on Organisation for Economic Cooperation and Development, *Review of Agricultural Policies: General Survey* (Paris, 1975); and idem, *Review of Agricultural Policies 1980–82* (Paris, 1983).

minent food shortage in that country, but rather to avert the danger of an exorbitant rise in food prices.

One other important social objective relates to land ownership and forms of tenure. In many countries, the preservation of the family farm and a stable rural community are important objectives of agricultural policy.

Of course, there are frequently major conflicts among the various policy objectives. Income distribution and equity concerns frequently clash with the efficiency objective. Some forms of price support for producers clash directly with the interest of consumers in lower food prices. Price-enhancement programs conflict with policies designed to achieve price stabilization consistent with long-term demand and supply forces in the competitive marketplace.

Sometimes, effective compromises have been developed to cope with conflicts among policy objectives. In other cases, contradictory policies and programs exist side by side under the overall agricultural policy umbrella.

Measures to Achieve Policy Objectives

The developed countries have used a variety of measures to achieve their agricultural policy objectives. These include:

- direct price supports, whereby governments purchase and store surplus production in order to maintain prices at a higher level than would otherwise be the case (this measure generally involves disposal programs for surplus food);
- deficiency prices, whereby producers receive some specified level of price support while consumers pay a "market-clearing" price; the difference between the two prices is paid — normally by the government — directly to producers;
- supply management, administered pricing, and marketing orders;
- import controls;

- export subsidies;
- "bottom-loading" — that is, production-input — subsidies and "tax expenditures";
- modifications of the competitive market system through regulatory controls, cooperatives, and marketing boards;
- macroeconomic policies, in the form of targeted monetary and fiscal policies and regional development initiatives; and
- public support of agricultural research and extension activities.

Just as there are conflicts among objectives, so there are often clashes among the instruments used to achieve objectives. Supply-management programs may be inconsistent with export-promotion programs, policies for regional development may clash with programs designed to promote "free trade" within a country, and so on.

The consequences that follow from the various price- and income-support measures governments use may be illustrated by a simplified explanation of the concepts underlying the different support programs, as shown in Figure 21.

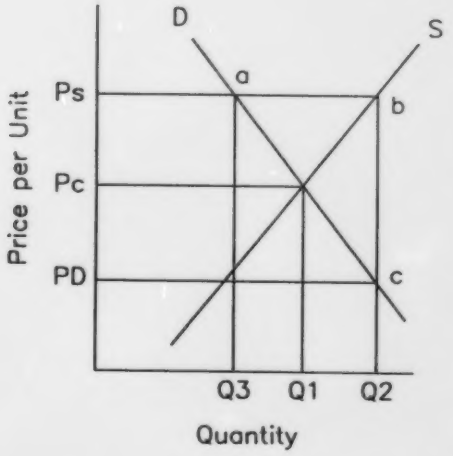
One of the more common ways of supporting farm prices is through programs to dispose of surplus production. Farm price supports are generally set at a level, *Ps*, above the market-clearing price, *Pc*. The resulting market glut or surplus, quantity *ab*, is disposed of through government storage, foreign aid, and other such disposal measures.

An alternative measure is to have the farm price set at level *Ps*, and to have the quantity produced, *Q2*, clear the market at price *PD*. Under this policy, consumers pay the price *PD*. The farmer's price is comprised of two parts: the market-clearing price, *PD*, and a deficiency price equivalent to *bc*, paid by government directly to the farmer.

Another measure used to support farm prices is to restrict production below that which would normally occur in the competitive marketplace. By reducing production from *Q1* to *Q3*,

Figure 21

Three Ways of Supporting Farm Prices



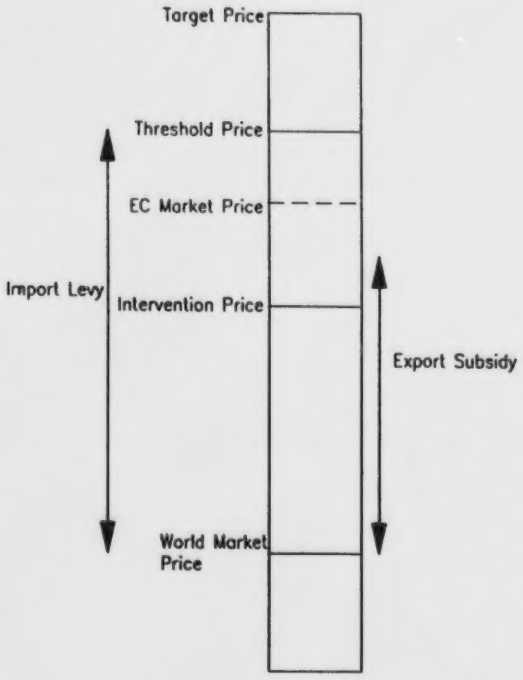
the price received by farmers would increase from the market-clearing price, *Pc*, to the production-control price, *PS*. Normally, this type of price-support policy requires restrictions on the imports of like foreign products.

Still another measure used to increase farm income is one that is often referred to as a "bottom-loading" subsidy. Examples of bottom-loading, or production-input, subsidies include subsidized interest rates on farm loans, fertilizer subsidies, and tax-exempt farm fuels. The effect of the bottom-loading subsidy is to reduce the farmer's production costs. Providing that market prices are not affected, the resulting reduction in production costs leads to a higher net income for the farmer.

A practical extension of these concepts is the European Community's use of a variable import levy and export subsidy for grain to support farm prices and incomes (see Figure 22).

Figure 22

The European Community's System of Price Support for Grain



Variable import levy **represents the difference between the EC threshold price and the world price.**

Export subsidy **represents the difference between the actual purchase price in the EC's internal market and the world price.**

Table 17

U.S. Target Prices, Loan Rates, and Market Prices for Wheat, crop years 1983–84 to 1989–90[a]

(U.S.$ per bushel)

Crop year	Target price	Loan rate	Findlay loan rate	Market price
1983–84	$4.30	$3.65	—	$3.84
1984–85	4.38	3.30	—	3.74
1985–86	4.38	3.30	—	3.28
1986–87	4.38	3.00	2.40	2.72
1987–88	4.38	2.85	2.28	2.96
1988–89	4.23	2.76	2.21	3.91[b]
1989–90	4.10	2.58	2.06	n.a.

[a]Price at Kansas City for No. 1, Hard Red Winter wheat.

[b]Average price, June 1988 to October 1988.

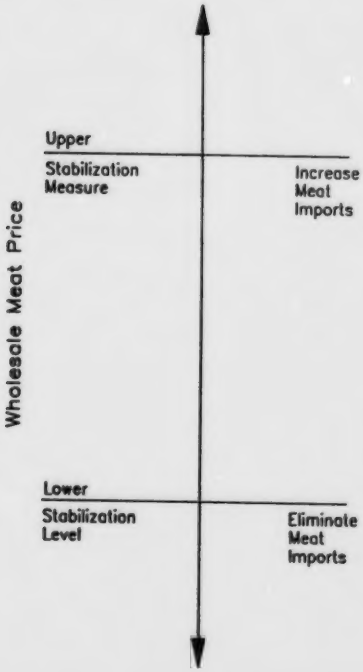
Source: United States, Department of Agriculture, Economic Research Service, *Agricultural Outlook* (Washington, D.C., March 1989), p. 56.

The import levy, which represents the difference between the EC threshold price and the world price, is imposed on imports of competing foreign products and, accordingly, serves as a form of tariff. Surpluses produced within the EC, as a result of a farm price support set above the internal market-clearing price, are disposed of in foreign markets with the help of export restitutions or subsidies. The export subsidy, which represents the difference between the EC market price and the price obtainable in the export market, is paid to the exporter of the EC farm product.

The United States has a loan-rate and target-price policy for wheat that represents a combination of storage and surplus disposal measures combined with direct deficiency payments to farmers. The U.S. farmer receives two types of payments: a loan rate or the market price, whichever is the highest during a specified period; and a deficiency price that represents the difference between the target price and the higher of either the market price or the loan rate (Table 17).

Figure 23

The Japanese Price-Stabilization Scheme for Meat



Still another example of a farm price-support policy is the Japanese price-stabilization program for meat (Figure 23). Under this program, Japan attempts to stabilize prices received by its livestock producers by "regulating" prices within a specified price band — an upper and lower stabilization price. When the Japanese market price tends to go above the upper stabilization price, imports of meat are permitted; conversely, when the market price tends to go below the lower stabilization price, imports of meat are reduced or eliminated.

Clearly, the levels at which the upper and lower stabilization prices are set will dictate the degree of support Japanese farmers receive, and the amount of meat Japan imports.

A General Profile of Agricultural Policies in Selected Countries[19]

It may be useful at this point to compare the agricultural policies of several developed countries. Four have been selected: Japan, the European Community, the United States, and Canada. While all four share common agricultural policy objectives and use similar instruments to achieve those objectives, each is distinct in some ways.

Japan

Japan's agricultural policies have been largely shaped by that country's experience of severe food shortages arising out of the ravages of World War II, by the limited land base available for food production, and by the political influence of Japanese farmers.

Food security has long been an extremely important objective of Japanese agricultural policy. Even after major efforts to increase domestic agricultural production, Japanese agriculture still provides only 57 percent of the country's food needs. While Japan has developed a relatively high self-sufficiency in commodities such as butter, pork and poultry, it imports a relatively large part of its bread wheat, feed grains, and sugar.

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19 This discussion draws on Organisation for Economic Co-operation and Development, *Review of Agricultural Policies 1980–1982*; idem, *National Policies and Agricultural Trade* (Paris, 1987); and G. Miller, *The Political Economy of International Agricultural Policy Reform* (Canberra: Australian Government Publishing Service, 1987).

Japan has maintained the highest level of price and income support for its farmers of any country in the world through import controls and direct payments from governments to farmers. During the 1979–81 period, about 38 percent of this support came from taxpayers. The remaining 62 percent was transferred from food consumers.[20]

The European Community

In some ways, the forces that have shaped agricultural policy in the EC are not too dissimilar from those in Japan. Initially, food security was an important policy objective, arising from postwar shortages, and, as in Japan, farmers have exercised considerable political influence.

Food security is no longer a major consideration in EC agricultural policy. The EC now is self-sufficient in many commodities, and produces considerable surpluses of some — including butter, skim milk powder, wheat, barley, and sugar.[21] In terms of the amount of price and income support provided to agriculture, the EC ranks second only to Japan. Of that support, 37 percent comes directly from governments and the remainder comes from consumers.[22]

The EC's main policy instrument is its Common Agricultural Policy (CAP), which uses variable import levies, intervention price support and purchasing, and variable export levies to increase domestic productivity. Unfortunately, the CAP has also created growing surpluses in the absence of effective production-control measures, and has required the use of export subsidies to dispose of surplus agricultural products. Moreover, it has come into direct conflict with U.S. agricultural production and trade policies.

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20 Organisation for Economic Co-operation and Development, *National Policies and Agricultural Trade*, pp. 132, 134.

21 Ibid., p. 15.

22 Ibid., pp. 132, 134.

The United States

The main components of U.S. agricultural policy have been price and income supports, acreage controls, and export promotion. The United States has long been a surplus producer and trader of agricultural commodities such as wheat, corn, and soybeans, and is more than self-sufficient in most commodities.[23]

Taxpayers provide by far the largest part of the support for agriculture — about 73 percent during the 1979–81 period — with the remainder representing a transfer from food consumers.

While the United States has long had various forms of export-promotion programs, support for such programs was greatly increased by the 1985 *Food Security Act*, which, however, has come into conflict with similar programs under the EC Common Agricultural Policy.

Canada

Canada's agricultural policies are similar to those of other developed countries, with the important difference that Canada's federal system of governance divides responsibility for agricultural policy between federal and provincial levels of government.

Support of Canadian agricultural producers is based on price- and income-support policies, and supply-management policies. The price- and income-support policies involve both direct price support and direct price and income payments (deficiency prices). Support may come from either federal or provincial governments, from a shared-cost program between the two levels of government, or from a tripartite arrangement under which both levels of government and producers share

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23 Ibid., p. 15.

the cost of the support programs. Examples of these programs include the *Agricultural Stabilization Act*, the *Western Grains Stabilization Act*, and a variety of provincial income-insurance programs.

Most of the costs of provincial programs have been shared between the provincial governments and producers, while the federal government and producers share costs under the *Western Grains Stabilization Act*. In 1985, the *Agricultural Stabilization Act* was amended to permit the development of a national plan referred to as the "Tripartite Red Meat Stabilization Program", the cost of which would be shared among both levels of government and participating producers.

Canada has supply-management programs for dairy products, eggs, chickens, and turkeys. In general, these programs involve production quotas at the national, provincial, and producer levels, and a set of prices administered by marketing boards under federal or provincial regulations.

Support for the dairy industry is divided into two major categories: fluid milk, the production and pricing of which are regulated at the provincial level; and industrial milk, the support of which comes partly from direct subsidies under the *Agricultural Stabilization Act* and partly through production controls and administered prices regulated under a national supply-management program implemented in 1966.

Support for the egg, chicken, and turkey sectors comes under the provisions of the federal *Farm Products Marketing Agencies Act*, which was passed in 1972 along with complementary provincial legislation. The national supply-management programs provide for national, provincial, and individual producer quotas along with a set of administered prices for eggs, chicken, and turkey production. Canada's supply-management programs are operated under, and are consistent with, the provisions of Article XI of the GATT.

In recent years, Canada has developed a number of *ad hoc* programs to help buffer agricultural producers against the effects of export-subsidy conflicts in the international

marketplace. One such example is the Special Grains Program, initiated in crop year 1986–87.

The Deeply Rooted Nature of National Agricultural Policies

In the previous seven rounds of GATT negotiations, talks on reducing tariffs on goods were of paramount importance. In the Uruguay Round, however, attention has shifted to the problem of nontariff barriers to trade (NTBs).

The negotiations on NTBs in the agricultural sector will be much more complex and controversial than those on tariffs. NTBs are deeply rooted in domestic agricultural policies that are themselves an integral part of the history, and of the political, economic, and social fabric of the countries concerned.

Many important features of U.S. agricultural policy — parity prices, loan rates, conservation reserves, the food stamp plan, the Commodity Credit Corporation — had their origins in agricultural legislation passed in the 1930s, beginning with the *Agricultural Adjustment Act of 1933*. U.S. countervail and antidumping legislation has direct roots in the *Smoot-Hawley Tariff Act* passed in 1930. U.S. food aid development policies have origins in Public Law 480, which Congress passed in 1954.

Most of the provisions of the EC Common Agricultural Policy — including the variable-import-levy system, the intervention-price-support system, and the export-restitution program — were embedded in the Treaty of Rome, the constitutional basis for the launching of the EC in 1957. originated with the Treaty of Rome.

Canada's agricultural policies are also deeply rooted in the traditions of the country and in longstanding programs and policies. Examples include the Crow Rate (1897), federal farm credit legislation (1929), and the Canadian Wheat Board (1935).

Table 18

The Cost of Agricultural Policies: Estimates for Selected Countries, 1979–81 and 1984–86

(billions of European Currency Units)

	Cost to the taxpayer		Cost to the consumer		Budget revenues		Total cost	
	1979–81	1984–86	1979–81	1984–86	1979–81	1984–86	1979–81	1984–86
	(1)		(2)		(3)		(1) + (2) – (3)	
United States	19.4	59.4	9.6	20.3	0.3	1.2	28.7	78.5
Canada	1.6	3.7	1.5	3.2	—	0.1	3.1	6.8
Australia	0.5	0.7	0.2	0.8	—	—	0.7	1.5
New Zealand	0.2	0.5	—	0.1	—	—	0.2	0.6
Japan	10.2	13.7	17.3	41.3	3.1	4.9	24.4	50.1
Austria	0.5	0.7[a]	1.1	1.2[a]	—	—	1.6	1.9[a]
European Community[b]	21.1	30.4	36.7	49.8	0.8	0.6	57.0	79.6

A dash (—) = negligible.

[a]Average for 1984–85.

[b]All present members of the EC except Portugal and Spain.

Definitions

The cost to the taxpayer corresponds to public expenditures for agriculture under the following items: research, training, extension, inspection services and disease control, rationalization of production, structural improvement, rural development, processing, marketing, subsidies to consumers, and price and income support. For the United States, Canada, Austria, and West Germany, it concerns expenditures by the states, provinces, and Länder, respectively. For the EC, these expenditures cover not only Community expenses but also expenses by the Member countries. For Australia, state expenditures refer to crop year 1984–85.

Table 18 - continued

The cost to the consumer was estimated as the impact of agricultural policies at the border (customs duties or their equivalent) on domestic prices. For each product, it was calculated by applying the corresponding tariff or the difference between the domestic and foreign price to the respective levels of consumption and then deducting consumer subsidies borne by taxpayers.

Budget revenues arising from price distortions should exist only for the products in which a country is not self-sufficient. They were estimated by multiplying the tariff or the price differential by the difference between the levels of consumption and production of these products.

The products covered by the analysis of cost to the consumer and budget revenues account for the following percentages of the value of the final output:

	1979–81	1984–86
United States	72%	72%
Canada	83	85
Australia	75	81
New Zealand	80	82
Japan	59	63
Austria	74	80
European Community	68	71

The cost (revenues) for products not covered by this analysis was considered to equal the average of that estimated for products the analysis includes.

This estimate is static, and does not imply any judgment about the dynamic or secondary effects that a reduction in protectionist border measures would have on national and international prices and, thus, on the cost to consumers and taxpayers.

Source: Organisation for Economic Co-operation and Development, *National Policies and Agricultural Trade* (Paris, 1987).

Many of these policies were bitterly contested, politically, regionally, and sectorally. Beyond marginal adjustments over time to meet changing conditions, these programs are extremely resistant to modification.

The Extent of Agricultural Support

Several major studies have examined the extent of agricultural support in various countries.[24] A detailed analysis of this support appears in Chapter 6. It should be noted at this point, however, that the Organization for Economic Co-operation and Development (OECD) estimates the annual cost of agricultural policies for the major OECD countries for the 1984–86 period to have been approximately 219 billion ECU (European Currency Units) — the equivalent of nearly $300 billion in terms of 1988 Canadian dollars. The cost included more than just direct government outlays. In the case of the EC and Japan, in particular, by far the largest part involved transfers from food consumers to agricultural producers (see Table 18).

While some of the OECD countries' domestic agricultural policies can be classified as trade neutral, there is no doubt that many others impinge directly on world agricultural trade, in the form of either import restrictions or export-trade distortions. It is these policies that are the focus of negotiations on agriculture in the Uruguay Round.

Two further general observations may be made regarding support programs for agricultural producers. First, there are few, if any, countries that have not adopted some form of sup-

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24 See Organisation for Economic Co-operation and Development, *National Policies and Agricultural Trade*; idem, *Monitoring and Outlook of Agricultural Policies, Markets and Trade* (Paris, May 1988); United States, Department of Agriculture, Economic Research Service, *Government Intervention in Agriculture* (Washington, D.C., April 1987); and idem, *Estimates of Producer and Consumer Subsidy Equivalents* (Washington, D.C., April 1988).

port for their agricultural producers. Second, during the past decade, it appears that government support to agricultural producers has been consistently high in Japan and the EC, and that it has increased significantly in both Canada and the United States, particularly in the past three or four years, largely in response to the growing use of export subsidies, initially by the EC, and later because of mounting trade conflicts between the EC and the United States.

The Need for Decoupling

If progress is to be made in the Uruguay Round, it is clear that some way must be found to deal directly with nontariff barriers to trade, or indirectly with domestic agricultural policies, although it will be difficult, at best, to dismantle many of these policies and programs.

It has been suggested that progress might be possible if agricultural price- and income-support programs could somehow be "decoupled" or separated from specific commodities. The objective would be to convert present commodity-price-support programs into the equivalent of some form of direct income payment to producers. The idea is that the direct income-support programs would continue to ensure support to producers, while leaving the allocation of agricultural resources to the market. In this way, the market essentially would dictate the nature of trade flows — and the resulting prices — among countries. Accordingly, it is argued, this new framework would eliminate the need for border restrictions, export subsidies, and other forms of trading-distorting devices that have multiplied during the past two decades.

Trade reform in agriculture will call for some basic, far-reaching, and innovative changes in the domestic agricultural policies of the developed countries.

5

The Canada-U.S. Free Trade Agreement and the GATT

The General Agreement on Tariffs and Trade (GATT) provided the general framework within which Canada and the United States conducted their free trade negotiations, and the basis on which the Uruguay Round of multilateral trade negotiations was launched in September 1986.

The Canada-U.S. Agreement, the most comprehensive trade agreement ever developed between two countries, was negotiated in accordance with Article XXIV of the GATT, which provides the international legal framework for the establishment of free trade agreements. A number of other GATT articles, codes, and ancillary agreements were also used to shape and determine the specific terms and conditions of the Canada-U.S. Agreement.

This chapter outlines the general objectives, scope, and functions of the GATT as they apply to the Canada-U.S. Agreement and to the multilateral negotiations discussed in Chapter 6. The chapter concludes with a summary of the major implications of the Agreement for the Canadian agricultural sector.

The GATT: The World Trade Forum

In preparing for a United Nations Conference on Trade and Employment in 1947, the conference organizing committee drafted a charter (referred to as the Havana Charter) for the establishment of an International Trade Organization (ITO). A GATT was also designed at that time to achieve tariff reductions on a multilateral basis within the framework and mandate of the proposed ITO.

At a United Nations conference in October 1947, the participating countries signed a "Protocol of Provisional Application", designed to bring the GATT into force pending the official adoption of the Havana Charter.

By 1950, however, it was clear that the U.S. Congress would not adopt the Havana Charter, and a decision was made to abandon plans to establish the ITO. The GATT, still operating under provisional arrangements, remained, however, and has become the *de facto* international forum for trade negotiations. It has never developed the more permanent institutional arrangements anticipated for the ITO, yet seven rounds of multilateral trade negotiations have nevertheless been conducted under its auspices since 1947. In 1986, the eighth round — the Uruguay Round — was launched.[1]

Scope and Functions of the GATT

The GATT is an international institution governed by particular legal principles and a set of rules, agreements, and regulations. Currently, formal membership in the GATT consists of 96 Contracting Parties, which usually meet once each

1 For a more detailed analysis of the beginning of the GATT, see E. McGovern, *International Trade Regulation*, 2nd ed. (Exeter, England: Globefield Press, 1986); J.H. Jackson, J.V. Louis, and M. Matsushita, *Implementing the Tokyo Round* (Ann Arbor: University of Michigan Press, 1984); and F. Stone, *Canada, the GATT and the International Trade System* (Ottawa: Institute for Research on Public Policy, 1984).

year, generally in late November. They are represented at these annual meetings by designated national officials, sometimes at the ministerial level.

A Council of Representatives, representing all Contracting Parties, conducts the ongoing business of the GATT by means of regular meetings convened throughout the year, and there are a large number of subcommittees of the Council to deal with particular aspects of the Council's overall responsibilities. Working panels and parties are also established from time to time to deal with such issues as trade disputes among countries.

The operations of the GATT depend on an international Secretariat located in Geneva and consisting of the Director-General, about 130 professional staff, and over 200 support staff. The GATT's budget is supported and approved by the Contracting Parties. Many members, including Canada, also maintain permanent missions in Geneva. Members of the national missions work closely with the GATT Secretariat.

It has been suggested that the GATT system serves five distinct functions:

- to provide a permanent framework for continuing international consultations on world trade issues;
- to provide a common set of principles and rules for the conduct of trade;
- to provide a framework for formal multilateral trade negotiations;
- to provide facilities and procedures for the resolution of trade disputes; and
- to provide facilities for the collection and dissemination of information relating to world trade developments and national trade policies, and to conduct some analysis and research relating to trade policy issues.[2]

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2 Stone, *Canada, the GATT and the International Trade System*, pp. 23–24.

GATT Principles and Articles

In its purest sense, the GATT is based on the fundamental principles of comparative advantage, specialization of production, and trade among countries. This implies an economic interdependence that works only when all countries comply with the obligations and responsibilities of the trading system built on those principles. These obligations and responsibilities are spelled out in the GATT Articles, a number of which are of particular relevance to agricultural trade.[3]

Article I, Most-Favored-Nation Treatment, is the principle by which any trade advantage one country gives to another is to be extended to all countries. Some bilateral trade deals and long-term commodity agreements for agricultural products have been criticized because they appear to have violated the spirit of Article I.

Article II, Schedules of Concessions, is based on the principle that protection, where provided to producers, should take the form of custom tariffs rather than nontariff barriers to trade (NTBs). The aim of this Article is to make the extent of the protection clear and to make competition predictable. Most agricultural trading countries, however, use a variety of NTBs — such as quotas, licenses, minimum pricing, and seasonal restrictions of various types — to protect agricultural commodities. The most obvious example of an NTB is the variable import levy employed by the European Community (EC).

Article III, National Treatment, provides that once an imported product has crossed a national boundary, there should be no discrimination against it in the importing country's domestic market. During the past several years, several viola-

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3 General Agreement on Tariffs and Trade, *Text of the General Agreement* (Geneva, July 1986). Most of the material in this section was presented originally in J.C. Gilson, "Agriculture and the Multilateral Trade Negotiations," in O. Saunders, ed., *Trading Canada's Natural Resources* (Toronto: Carswell, 1987).

tions of Article III involving agricultural products have been reported to the GATT. In 1978, for example, a GATT panel found that the EC employed measures that discriminated against imports of U.S. nonfat dry milk and maize gluten.

Article VI, Antidumping and Countervailing Duties, provides for the application of antidumping or countervailing duties if the dumping of products or subsidized exports by one country causes, or threatens to cause, material injury to a domestic industry in the receiving country.

Article XI, General Elimination of Quantitative Restrictions, establishes a general ban on measures "other than duties, taxes or other charges" to restrict the import of any product. The Article then states that the general provision does not apply to agricultural or fishery products. The exemption permits the use of other restrictive measures, such as quotas, by an importing country, provided that it does not reduce total imports of the product — as a proportion of national production — below the previous normally prevailing level, and provided that it restricts or controls its own national production of the like product. Canada's supply-management programs for eggs, chickens, and turkeys operate under the provisions of Article XI. It is noteworthy that when the supply-management program for eggs was investigated by a GATT working party in 1976, all members of the working party, with the exception of the United States, found it acceptable.

Article XVI, Subsidies in General, establishes a general ban on the use of export subsidies, but provides an exception for primary products. The exception indicates that contracting parties should seek to avoid the use of subsidies, but if a subsidy is granted "which operates to increase the export of any primary product...such subsidy shall not be applied in a manner which results in that contracting party having more than an equitable share of world export trade in that product." The United States has charged the EC with using export sub-

sidies in such a way as to gain more than an equitable share of world export trade. It is extremely difficult, however, to determine what constitutes "an equitable share", because trade is obviously affected by so many dynamic factors, such as exchange-rate fluctuations. Nevertheless, export subsidies are countervailable in an importing country when it can be demonstrated: (1) that an export subsidy exists; and (2) that the export subsidy causes, or threatens to cause, material injury to the importing country. Clearly, the export-subsidy issue now represents one of the most unsettled and troublesome areas of agricultural trade.

Article XIX, Emergency Action on Imports of Particular Products, has commonly been referred to as the "safeguard" clause of the GATT. This Article permits a country to invoke suitable emergency measures for a temporary period to prevent injury from sudden, unexpected, and increased quantities of an imported product. Emergency measures may be employed where, "as a result of unforeseen circumstances...any product is being imported...such increased quantities and under such conditions as to cause or threaten serious injury to domestic producers...of like or directly competitive products." Many countries have employed safeguard measures as provided for under Article XIX. These measures have included embargoes, quotas, import surcharges, and voluntary restraint agreements. Article XIX permits Canada, for example, to employ import quotas from time to time on red meat products.

Article XXIII, Nullification or Impairment, provides that a country may appeal to the GATT for the remedy of another country's action if it feels that the other country is conducting its domestic or trade affairs in a way that nullifies or impairs any benefits that would accrue to the complainant under the GATT. Examples of instances where such referrals to the GATT are contemplated include violations of the provisions of Articles III, XI, and XVI.

Special exceptions or concessions have been made for agriculture under several of the GATT Articles. In addition, there are other general exemptions that should be noted. In a decision of March 5, 1955, the obligations of the United States under Articles II and XI were waived to the extent necessary to permit the U.S. government to take action required under Section 22 of the *Agricultural Adjustment Act of 1933*. Other waivers on agriculture have also been granted, under specific circumstances, to Australia, Belgium, Luxembourg, West Germany, and Italy.

In addition, various members, including the EC, Austria, Finland, Sweden, and Switzerland, have used different types of variable import levies to protect certain of their agricultural sectors. There are no apparent restraints on the maximum levels of these levies. Although there are divergent views on the legal status of variable import levies under the GATT, there can be no question that they represent an important restriction with respect to a large part of agricultural trade.

In summary, a review of the various GATT Articles and other relevant provisions indicates that the special exceptions and general waivers granted to agriculture under the GATT have led to a situation where the agricultural sector falls considerably short of the liberalized trading standards set for other industries. When this special treatment under the GATT is coupled with blatant violations of even these relaxed principles, it is not surprising that so little progress has been made during the past 40 years on the liberalization of agricultural trade. This experience does not bode well for the Uruguay Round, where nontariff barriers to trade will dominate the negotiating agenda.

The GATT Negotiating Process

The national approach taken to the multilateral trade negotiations varies tremendously from country to country. In virtually all cases, however, it is a difficult process.[4]

In the EC, for example, progress in multilateral trade negotiations is complicated by the need to achieve consensus on trade issues and policies among 12 member states. The difficulties could be even more severe during the Uruguay Round in the sense that the negotiations will focus on NTBs and the corresponding implications for domestic farm policies.

In the United States, the Constitution provides Congress with the power to set international trade policies, a power that it has jealously guarded over the years.

Typically, Congress has delegated authority to the president to engage in multilateral trade negotiations, generally through a trade bill approved by Congress in advance of the actual talks. At the same time, however, the president's executive authority in the trade negotiations has been constrained by specific directives in these trade bills and by the fact that Congress has had to approve the results of the negotiations before they could take effect. This approach, while cumbersome, has worked reasonably well when negotiations have focused primarily on tariff reductions.

After the experience of the Kennedy Round, however, it was clear that the traditional decisionmaking process in Congress, and between Congress and the president, did not work well when GATT became involved with NTBs. On one side, Congress was unwilling to grant the president advance authority to negotiate on NTBs that included domestic policies and programs. On the other side, other countries were reluctant to negotiate with a president who, with little ad-

4 See Jackson, Louis, and Matsushita, *Implementing the Tokyo Round*; and I.M. Destler, *American Trade Politics* (Washington D.C.: Institute for International Economics, 1986).

vance authority from Congress, had to submit any results of trade negotiations to Congress for approval through normal procedures.

It was this dilemma that caused Congress to include "fast-track" procedures in the *Trade Act of 1974*. Under these procedures, the president can proceed with trade negotiations on NTBs, but 90 days before entering into any international agreement, he must notify Congress of his intentions and consult extensively with key congressional committees about his proposed agreement. Following the agreement, the president then submits corresponding legislation to Congress, which then votes yes or no to the whole package of legislation — no amendments are permitted — within a reasonable period, normally about 60 days of legislative session. Fast-track procedures were used for the results of the Tokyo Round of GATT negotiations (1973–79), and also for the Canada-U.S. Agreement.

Other countries, including Canada, are governed by their respective constitutions, laws, and political systems in their respective approaches to the GATT negotiations.

It is important to note that for most countries, including Canada, the results of the multilateral trade negotiations are not "self-executing". They do not automatically become law in a particular country even if that country fully accepts the results. The countries involved must implement the results of the trade negotiations through changes in existing domestic laws or through new domestic legislation.

Finally, some comments should be made about the negotiating process within the GATT system.

The earlier GATT negotiations with respect to tariff reductions were conducted on a "request and offer" basis, country by country, and item by item.[5] This approach was cumbersome and extremely time consuming. For the Kennedy and Tokyo Rounds, many countries, including the United States but not

5 Stone, *Canada, the GATT and the International Trade System*, p. 59.

Canada, adopted the "linear" approach to tariff negotiations by which countries agreed to use some general formula for across-the-board percentage cuts in existing tariffs.

Multilateral negotiations relating to reductions in NTBs represent a far more complex problem than has been the case for tariff reductions. This challenge will be addressed in Chapter 6, where discussion will focus on concepts such as the Producer Subsidy Equivalent, trade-distorting subsidies, and decoupling. There is little question that the negotiating process during the Uruguay Round will be complex, difficult, and controversial.

Given recent concerns about the effectiveness of the GATT as an international trade forum,[6] it is important to note that several sections of the Ministerial Declaration on the Uruguay Round commit the Contracting Parties to courses of action that should help strengthen the role and functions of this international institution in global trade negotiations. Three sections of the Declaration should be noted in particular: review of the existing GATT articles; strengthening of the dispute-settlement procedures provided for under the GATT; and overall review of the functioning of the GATT system.

In spite of the GATT's limitations, it is still the only world forum for a systematic focus on and discussion of multilateral trade issues and questions.

The Canada-U.S. Agreement

One major reality underlying the debate over the Canada-U.S. Agreement is the enormous amount of annual trade between the two countries, much of which was relatively free even before the Agreement was negotiated.

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6 See, for example, P. Choate, and J. Linger, "Tailored Trade: Dealing with the World as It Is," *Harvard Business Review* (January-February, 1988), pp. 86–93.

Canada's major agricultural exports to the United States include grains, bakery products, animal feeds, oilseeds and oilseed products, hogs, cattle, and red meats. Live animals and red meats account for almost 40 percent of Canada's total agricultural exports to the United States.

The major agricultural commodities imported from the United States include grains, grain products, animal feeds, oilseeds and oilseed products, live cattle, red meats, poultry, eggs, fruit, nuts, fresh vegetables, plantation crops, and a variety of other processed food products. Of agricultural imports from the United States worth $3.6 billion in 1986, fruits, nuts, fresh vegetables, and plantation crops accounted for almost 46 percent. The plantation crops — coffee, tea, and cocoa — were largely transshipments through the United States from other countries.

Agricultural Trade Issues and Concerns

Trade between Canada and the United States, in volume terms, is the largest bilateral trading relationship in the world. In recent years, however, it has been characterized by growing trade conflicts and irritants. A partial listing of the agricultural conflicts illustrates that security of access to one another's markets cannot be taken for granted.

Between 1985 and 1987, various interest groups in the United States criticized, or pressed for protectionist action against, such Canadian exports and policies as bakery and confection products containing high sugar content; Canadian subsidized transportation policies relating to grain, animal feeds, and canola and canola products; Canada's restrictions on egg imports; subsidized Canadian hog exports to the United States; beef, fresh-cut flowers, and potash exports to the United States; and provincial discrimination against U.S. wine exports.

During that same period, Canada initiated a number of actions and protests against U.S. domestic agricultural and trade policies, including the imposition of antidumping duties on U.S. potato and yellow onion exports to British Columbia, and a countervailing duty on U.S. corn exports. Canada has also protested subsidized exports of U.S. grain to third countries to which Canada has long been a traditional supplier.

Canada's growing concern about increasing trade conflicts with the United States was compounded during 1986 and 1987 by moves in Congress to introduce a highly protectionist omnibus trade bill. Canada's decision to enter into bilateral trade negotiations with the United States was influenced, in part, by a desire to forestall growing U.S. protectionism, and also to reduce trade irritants between the two countries.

On a more positive note, Canada's objectives in the bilateral trade negotiations were to expand and enhance trade between the two countries; to secure and to provide greater stability and predictability for that access; and to develop a mutually acceptable and constructive basis for, and approach to, the Uruguay Round of multilateral trade negotiations.

Implications of the Agreement's General Provisions for Agriculture

It is not possible to assess constructively the results of the Agreement for agriculture without first understanding the general trade framework that the Agreement has developed. It should be emphasized that many other political, commercial, and sectoral considerations, besides agriculture, contributed to and influenced the Agreement's numerous provisions. Of course, tradeoffs, compromises, and strategic omissions are the result of a comprehensive, as opposed to a sectoral, approach to trade negotiations. Many of the Agreement's provisions were designed to anticipate further

negotiations in the Uruguay Round; this consideration is of particular relevance for agriculture, since several critical issues cannot be resolved bilaterally but must await the outcome of negotiations with the EC, Japan, and other major agricultural trading countries.

For the purposes of this discussion, it is not necessary or practical to make an exhaustive list of all those general provisions of the Agreement that affect agricultural trade. Instead, only a selected number of the more pertinent general conditions and provisions will be noted.

The Agreement has been established on the basis of a "free trade area" as outlined in Article XXIV of the GATT. A trading relationship based on a free trade area is to be distinguished from other types of trade relationships such as a customs union, or a federal or unitary state. A free trade area is generally defined as one which involves the removal of tariffs and quantitative restrictions, such as quotas, on trade between the member countries, but with each member retaining its own distinct barriers against nonmembers.[7]

Another general condition of the Agreement relevant to agriculture is the provision for "national treatment". Under this provision, which is consistent with Article III of the GATT, each country must, to the extent provided in the Agreement, accord national treatment with respect to investment and trade in goods and services. In practical terms, this means that any imported good, once it has passed whatever tariffs or other provisions apply at the border, cannot be discriminated against or treated any differently from a like domestic product within that domestic market.

Still another general condition of the Agreement that applies to agriculture is the provision for a binational dispute-settlement mechanism to deal with antidumping and

7 For a discussion of free trade areas, see A.E. Safarian, *Canadian Federalism and Economic Integration* (Ottawa: Information Canada, 1974).

countervailing duty actions taken, in the first instance, at the national level.

The Agreement also calls for the elimination of all tariffs, tariff-related measures, quantitative restrictions, and other restrictive measures applied at the border by January 1, 1998. There are some particular exceptions for agriculture, which will be discussed later.

Finally, the Agreement provides for the establishment of a working group that will, among other things, develop, over a five-to-seven-year period, a mutually agreeable set of rules and disciplines governing the use of government subsidies and private anticompetitive pricing practices such as dumping, which have been controlled through the unilateral application of countervailing and antidumping duties.

There are, of course, other general provisions in the Agreement relating to government procurement, services, investment, and energy that could have both direct and indirect effects on agricultural trade.

The Effect of the Agreement's Provisions on Agriculture

The formal text of the Agreement should be consulted for detailed information on the large number of specific technical provisions relating to bilateral trade between the two countries.[8] The discussion here is confined to a selected number of provisions relating directly to agricultural trade.

Market Access

The Agreement provides for a number of guidelines, conditions, and standards relating to market access for agricultural products.

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8 Canada, Department of External Affairs, *The Canada-U.S. Free Trade Agreement* (Ottawa, 1987).

First of all, as noted above, the Agreement provides for the removal of all tariffs, tariff-related measures, quantitative restrictions, and other such border controls (with some exceptions to be noted later) over a ten-year period, beginning on January 1, 1989.

A significant part of Canadian-U.S. agricultural trade is already tariff-free or occurs at relatively low tariff levels. This is the case for hogs, cattle, and red meat products. The elimination of remaining tariffs will certainly permit greater access to U.S. soybean oil and meal and, at the same time, should open up considerable opportunities for the expansion of exports of canola and canola products to the United States.

Currently, special import licenses are required for the importation of U.S. grains and grain products to Canada. These import licenses are to be removed when the level of government support for grain production in the United States drops to a level equivalent to the support level in Canada. A complicated formula has been established for the measurement of these respective levels of support in both countries. Specific conditions will be established under which U.S. grain products can be imported into Canada. The Canadian Wheat Board retains the right to issue export permits for the sale of prairie wheats, oats, and barley to the United States.

The two countries have agreed to exempt each other from import restrictions on beef and veal.

Global import quotas on Canada's supply-managed products — eggs, turkeys, and chickens — have been set at average levels of actual imports from the United States over the past five years.

Canada's dairy industry is protected under the Agreement in accordance with the provisions contained in Article XI of the GATT, which applies to supply-management programs.

The seasonal tariffs on fruits and vegetables are to be eliminated over a ten-year period, with a special provision for a temporary duty — called the "snap-back" provision — which

can be invoked under certain conditions. For a period of up to 20 years, the snap-back provision will permit the restoration of current tariff rates if, for example, the import price for five consecutive working days falls below a calculated monthly average. While this snap-back option applies to both countries, it is obviously of far greater importance to Canada than to the United States.

Trade-Distorting Subsidies and Dumping Practices

One of the Agreement's goals is to eliminate all trade-distorting agricultural subsidies. To that end, a working group is to be established to develop, over a period of five to seven years, a mutually acceptable set of rules governing the use of government subsidies, and private, anticompetitive pricing practices such as dumping. These rules will be designed, insofar as possible, to:

- discourage the use of trade-distorting subsidies and dumping practices in agricultural trade between the two countries;
- provide a more specific framework for the national application of countervailing and antidumping duties when such application is deemed to be necessary; and
- provide guidance and a set of standards to the binational dispute-resolution panel in the case of appeals concerning the national application of countervailing and antidumping duties.

A first step in the direction of modifying the use of trade-distorting subsidies is the elimination of all rail subsidies on agricultural products (under the *Western Grain Transportation Act*) exported to the United States through Canadian west coast ports. This action will mainly affect mill feeds and canola meal. The Agreement is silent on rail subsidies applied

to agricultural exports through other ports and exit points. Presumably, the existing countervailing and antidumping duties on other products — for example, hog exports — will continue until more clearly defined rules and standards are established.

National Treatment

The Agreement's national treatment provision, as it applies to wine and distilled spirits, means that no discrimination is to be allowed between imported and domestic products regarding their pricing, listing, distribution practices, or labeling requirements.

The Binational Dispute-Settlement Mechanism

One of the more significant results of the Agreement is its provision for the settlement of disputes relating to countervailing duty and antidumping cases through the establishment of a binational dispute-settlement panel. The panel is to replace the existing judicial review system, whereby the two countries' domestic courts hear appeals of the decisions made by their trade regulation agencies. The panel's primary objective will be to assure that each country applies countervailing or antidumping duties in a manner that is consistent with its domestic laws.

The panel will consist of five people: two from each country and a fifth selected jointly, or, failing agreement, from a previously agreed roster of individuals. The panel's findings will be binding on both governments.

To illustrate how the binational panel will be an improvement over the present system, take the case of the countervailing duty action that the United States brought against Canadian hog exports.

In the United States, the International Trade Administration (ITA), acting on behalf of the Secretary of Commerce, has concurrent responsibilities with the U.S. International Trade Commission (ITC) for the administration of antidumping and countervailing duties. The ITA is charged with determining the existence and amount of any subsidy or dumping margin, while the ITC determines whether subsidized or dumped imports cause, or threaten to cause, material injury to domestic parties.[9]

In the hog case, U.S. producers charged that Canadian hog exports were unfairly subsidized, and petitioned the ITA and the ITC to investigate.

The ITC made a preliminary determination that Canadian hog exports were causing material injury to U.S hog producers, while the ITA made a preliminary determination that they were being subsidized. After an extended hearing from Canadian representatives, who opposed these preliminary decisions, the ITA made a final determination on the extent of the export subsidy, and the ITC made a final determination of the extent of the material injury.

Canadian representatives then appealed these final determinations to the U.S. Court of International Trade, which has jurisdiction over U.S. trade-remedy laws. In March 1988, three years after the initial action, the U.S. Court of International Trade made a final decision, agreeing with the earlier determinations of the ITA and ITC and, accordingly, the Canadian appeal was dismissed.

The Canada-U.S. Agreement does away with this drawn-out and rather one-sided process. Under the new system, the Canadian hog producers would have had the right to appeal the ITC's final decision to the binational panel, whose decision would be binding on both countries.

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9 S.L. Lande and C. Van Grosstek, *The Trade and Tariff Act of 1984* (Lexington, Mass.: Lexington Books, 1984), pp. 111–112.

Under the Agreement, both countries continue to have exclusive jurisdiction over their respective antidumping and countervailing duty laws. The binational panel, however, will ensure, through the appeal process, that these laws are applied in a fairer, more even-handed, and more timely way.

An Assessment of the Results of the Agreement for Agriculture[10]

The Canada-U.S. Free Trade Agreement does not provide for complete "free trade" for most agricultural products. Enhanced trade opportunities, yes, but not a completely unfettered, market-oriented bilateral flow of agricultural products across the border.

The closest approach to free trade will occur in the cattle, hogs, and red meat sectors, which have had a large measure of free trade for many years. The few remaining border restrictions in these sectors — tariffs and health regulations — will be phased out or harmonized in a way that will further liberalize trade. The bilateral dispute-settlement panel should encourage a more restrained and predictable application of national countervailing and antidumping laws. The remaining uncertainties relate to the criteria and standards that are

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10 Among the considerable number of excellent studies that focus on Canadian-U.S. tree trade and on the Agreement itself, see K. Allen and K. Macmillan, eds., *U.S.-Canadian Agricultural Trade Challenges: Developing Common Approaches* (Washington, D.C.: Resources for the Future, 1988); P. Wonnacott, *The United States and Canada: The Quest for Free Trade* (Washington, D.C.: Institute for International Economics, 1987); J.J. Schott and M.G. Smith, eds., *The Canada-United States Free Trade Agreement: The Global Impact* (Washington D.C.; Ottawa: Institute for International Economics and Institute for Research on Public Policy, 1988); D. Cameron, ed., *The Free Trade Papers* (Toronto: James Lorimer, 1986) and R.G. Lipsey and R.C. York, *Evaluating the Free Trade Deal: A Guided Tour through the Canada-U.S. Agreement*, Policy Study 6 (Toronto: C.D. Howe Institute, 1988.

to distinguish between the use of national subsidies which are acceptable from a trade point of view and those which are judged to be trade distorting and thus unacceptable under the Agreement.

The elimination of tariffs will permit a modest increase in bilateral grain trade, and a potentially significant increase in trade in oilseeds and oilseed products. There are considerable market opportunities for canola oil, in particular, in the United States. There also appear to be some opportunities for the expansion of Canadian exports of hard, red, spring milling wheat and durum wheat (for pasta use), although this is an area of considerable sensitivity in certain U.S. grain-producing regions.[11]

The elimination of Canada's two-price wheat policy, and a resulting lower price for domestic milling wheat, will provide some opportunities for the more efficient, specialized Canadian bakery-product manufacturers to compete for markets in the United States. At the same time, the lowering of tariffs and other import barriers to trade will open the Canadian market to greater competition from the larger, more vertically integrated U.S. manufacturers of certain bakery products.

It is to be noted, however, that the Agreement will mean few major changes in the basic domestic grain policies and institutions of either country in the short term. Whether, and to what degree, more significant changes will occur in the longer term will depend on three major factors:

- the results of the working group established under the Agreement to work on the definition and application of agricultural subsidies as they apply to trade negotiations;
- the outcome of the Uruguay Round of multilateral trade negotiations; and

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11 S. Hillgren, "Trade Pact," *Agweek* (Grand Forks, North Dakota), October 12, 1987, p. 41.

- the degree to which the United States reduces its public support of, and expenditures on, agriculture programs.

While the Agreement's 20-year snap-back provision relating to reductions of tariffs on fresh fruits and vegetables will provide considerable protection for the less perishable, storable commodities, it will provide far less protection for Canada's tender tree fruits and the more perishable vegetables. One can anticipate substantial adjustment problems in this sector during the next decade.

The Agreement will require little adjustment for the primary producers of Canada's supply-managed commodities — eggs, chickens, and turkeys. There could be considerable adjustments ahead, however, for those Canadian food processors who are forced to buy their primary inputs in the protected Canadian supply-managed market and who will have to compete with lower-priced, value-added commodities — such as chicken kiev and turkey TV dinners — imported from the United States. This anomaly is certain to create considerable difficulties in the longer term.

It should be noted that the Agreement did not address Canada's supply-managed agricultural sectors in a substantial way. Agricultural trade policies relating to these sectors are determined primarily by Article XI of the GATT. If the Uruguay Round of negotiations changes this Article in any substantial way, there can be little question that enormous changes and adjustments will be called for in these sectors.

The Agreement's provisions that call for a phasing out of tariffs and other border restrictions over a ten-year period and a full application of national treatment for Canadian imports of U.S. wine and distilled spirits will mean major adjustments in Canada's grape and wine industries. Provincial liquor boards and commissions will be forced to end their present listing and pricing practices, which discriminate against imports of wines from the United States and which effectively protect the domestic grape-growing industry. The federal

government and the provincial governments of Ontario and British Columbia have already recognized that considerable adjustments will be required, and have agreed to develop some form of trade-adjustment assistance for Canadian grape producers.

It should be noted, however, that the Agreement's national treatment provision is consistent with Article III of the GATT. In fact, while the provinces were not directly involved in the agreement signed at the end of the Tokyo Round in 1979, they did sign a document entitled "The Provincial Statement of Intentions with Respect to the Sale of Alcoholic Beverages by Provincial Marketing Agencies in Canada."[12]

In this statement, the provinces committed themselves to conform with the provisions of Article III of the GATT by no later than 1987. Between 1982 and 1987, the EC pressed Canada on several occasions to indicate what progress, if any, the provinces were making on their commitment. In late 1987, a GATT panel ruled that Canada — that is, provincial liquor boards and commissions — had violated several GATT provisions in terms of its treatment of wine imports.

The Canada-U.S. Free Trade Agreement has made a start on the reforms necessary to achieve a more liberal agricultural trading arrangement. But it is only a start. By far the more difficult issues relating to agricultural trade remain to be resolved in the Uruguay Round of the multilateral trade negotiations. Unless and until the EC, Japan, and other major agricultural trading countries are involved directly in the agricultural negotiations, there is a limit beyond which Canada and the United States are not able to go in terms of committing themselves to major changes in their domestic agricultural and trading policies. Nevertheless, the Agree-

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12 See R. Fox, "A Provincial Perspective on Managing Trade Irritants" (Paper presented to a trade symposium sponsored by the Law Resources Institute, University of Calgary, Banff, Alberta, April 1987).

ment has taken certain initiatives that should add a constructive impetus to the GATT negotiations.

At the same time, there is a concern that the growing number of bilateral agreements — the Canada-U.S. Agreement is just one of perhaps 40 such arrangements[13] — will undermine the multilateral trade negotiations. There are some dangers associated with bilateral trade agreements, but it was the growth of such agreements during the 1930s that led, in 1947, to a collective effort by all countries concerned to develop and support a global trading arrangement — the GATT. Perhaps the many new bilateral trade arrangements of the 1980s will culminate in a serious reaffirmation of the GATT.

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13 "What Bilateral Deals Mean for Trade," *The Economist*, February 6, 1988.

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Agriculture and the Uruguay Round of the GATT

This chapter examines the general issues that the Contracting Parties to the General Agreement on Tariff and Trade (GATT) face in the Uruguay Round of trade negotiations. These major issues include an array of import restrictions that discourage market access, and various direct and indirect subsidies that distort trade. The identification and measurement of the various trade-distorting policies and practices represents a complex and controversial part of the negotiations.

The chapter concludes with an assessment of the negotiating strategies of the participants, and an evaluation of the prospects for trade reform in the Uruguay Round, which is scheduled to be completed in September 1990.

The Uruguay Round: Objectives, Problems, and Issues

World agricultural trading relationships had seriously deteriorated by the time the Uruguay Round of the GATT was announced in September 1986. In view of this deterioration, there can be no question about the significance of this eighth round of GATT negotiations.

In general, the Uruguay Round committed 96 member countries of the GATT to an immediate cease-fire on the growing protectionism in world agricultural trade, and to early preparations for negotiations leading to a rollback in the national policies and practices that were causing the escalation in agricultural trade conflicts. These commitments have been reiterated and reinforced several times since: at Economic Summits held in Venice in 1987 and in Toronto in 1988, at a Ministerial meeting of the Organisation for Economic Co-operation and Development (OECD) in Paris in May 1987, and at several high-level GATT meetings of officials from the Contracting Parties. Despite these summit-level announcements of support, however, agricultural trade conflicts have continued to intensify — not a promising start for global negotiations of such enormous importance.

What, then, can one expect from the Uruguay Round of multilateral trade negotiations? Do the countries involved have the political capacity and the national will to undertake the types of domestic agricultural policy reforms that will be required if a more liberal trading framework is to be achieved for the world agricultural system?

Basic Objectives and Commitments of the Uruguay Round

The Uruguay Round represents one of the most complex and ambitious programs of multilateral trade negotiations ever undertaken by the GATT.[1] The 96 Contracting Parties involved in the launching of the round called for and committed themselves, *inter alia*, to a comprehensive reform of international agricultural trade policies and, by implication,

1 For a full account of the launching of the Uruguay Round, see General Agreement on Tariffs and Trade, *GATT Activities 1986* (Geneva, June 1987).

to an equally sweeping reform of existing domestic agricultural policies and programs.

In brief, the Contracting Parties expressed the collective determination to halt and reverse protectionism and to remove distortions to trade; to preserve the basic principles of the GATT and to further its objectives; and to develop a more open, viable, and durable multilateral trading system. To promote economic growth and development through a more open trading system, the Contracting Parties recognized, at the same time, that the negative effects of financial and monetary instability on the world economy and the enormous external debts carried by a number of the less-developed countries called for a closer linkage of trade with monetary, financial, and development policies.

Among the several general commitments the Contracting Parties made at the start of the Round, the following would appear to be the most important for agriculture.

- Each country agreed that it would not take any trade-restrictive or trade-distorting measures inconsistent with the provisions of the GATT or with any instruments or provisions previously negotiated within the framework of the GATT. This "standstill" agreement was to take effect immediately and to continue in force until the formal completion of the Uruguay Round.
- Each country agreed to roll back — that is, to phase out — all trade-restrictive or distorting measures or to bring them into conformity with the GATT within an agreed period of time.
- Each country agreed that its implementation of commitments on standstill and rollback would be subject to multilateral surveillance to ensure that they were being met.
- The negotiations were to review and strengthen the existing GATT Articles, provisions, and disciplines as the basis for strengthening the role of the GATT and to improve the

functioning of the multilateral trading system based on those principles, rules, and disciplines.

- In order to ensure prompt and effective resolution of trade disputes, the negotiations were to improve and strengthen the rules and procedures of the dispute-settlement process.

The specific commitments the Contracting Parties made with respect to agriculture were based on an urgent need to bring more discipline and predictability to world agricultural trade by correcting and preventing import restrictions and export trade distortions, including those practices and policies related to structural surpluses and associated trade imbalances and instability in world agricultural markets. There was agreement, in particular, that the negotiations were to achieve greater liberalization of trade in agriculture based on measures consistent with a greatly strengthened and operationally effective set of GATT rules and disciplines relating to agricultural trade. Specifically, this was to mean:

- improved market access through, *inter alia*, the reduction of import barriers;
- improvement of the competitive environment by increasing discipline on the use of all direct and indirect subsidies and other measures directly or indirectly affecting agricultural trade, and the phased reduction — and the removal of the basic causes — of the negative effects on trade of direct and indirect subsidies; and
- the minimization or removal of the adverse effects of any sanitary or phytosanitary regulations and barriers on agricultural trade.

Of the 14 Negotiating Groups established to carry out the GATT negotiations, one group was specifically assigned to agriculture. Few other sectors were designated for this special treatment. In addition, several other Negotiating Groups, including those on tropical products, subsidies and counter-

vailing measures, dispute settlement, and the GATT Articles, will have a direct significance for the agricultural sector. Clearly, the negotiations relating to agriculture have been given a prominent place in the Uruguay Round.

The Basic Problems, Issues, and Challenges

Negotiations on nontariff barriers to trade (NTBs) in agriculture are far more complex and more difficult to negotiate than those on tariff levels. They imply fundamental reform of domestic agricultural policies that are deeply rooted in the political, economic, and social structures and traditions of the countries involved. Experience has demonstrated that most countries are quite unwilling to surrender their national sovereignty over domestic policy matters to international control and discipline.

The current agricultural trade issues revolve around all trade-restrictive or trade-distorting measures inconsistent with the current provisions of the GATT, or any other instruments negotiated within the framework of the GATT. In general, such measures may be classified as those import restrictions that discourage market access and those, involving all direct and indirect subsidies, that distort trade.

The first category — measures restricting market access — includes licensing, quotas, tariffs, health standards, variable import levies, minimum pricing, state trading, voluntary restraint agreements, countervailing and dumping duties, subsidized import replacements, and a range of other contingency devices and regulations.[2]

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2 See A.J. Webb, *Protection in Agricultural Markets* (Washington, D.C.: United States, Department of Agriculture, International Economics Division, September 1984); and J. Quinn and P. Slayton, *Non-Tariff Barriers after the Tokyo Round* (Montreal: Institute for Research on Public Policy, 1982).

Trade-distorting subsidies (both direct and indirect) include such measures as export restrictions and subsidies, commodity export bonuses, favorable trade credit arrangements, subsidized trade credit, barter trade, domestic subsidies with a trade-distorting effect, long-term bilateral agreements, state trading, subsidized transportation and shipping arrangements, sales for local (nonconvertible) currencies, and some food-aid programs.

In general, all trade-distorting subsidies (both direct and indirect) and associated border restrictions are to be tackled in the Uruguay Round. Few of these trade restrictions are not now in use or have not been employed in recent years, and few countries can plead innocence with respect to the use of trade-distorting policies of one type or another. What is equally significant, each of these measures is a result of some specific national policy generated by some domestic need or objective, or the product of some sensitive or controversial national issue resolved through compromise within the particular country's political system.[3]

Agricultural trade reforms cannot be isolated from the national objectives, internal controversies, and domestic economic and political forces associated with the agricultural policies and programs of a particular country. Trade reform means reform within each of the countries associated with the GATT negotiations.

A General Profile of Agricultural Import Restrictions

The general significance of import-trade-restricting measures can be illustrated by drawing on examples from the

3 See D.G. Johnson, K. Hemmi, and P. Lardinois, *Agricultural Policy and Trade, A Task Force Report to the Trilateral Commission* (New York: New York University Press, 1985).

European Community (EC), the United States, Japan, and Canada.

The single most important import-trade-restricting measure in the EC is the variable import levy. The levy is essentially the difference between the EC threshold price and the world import price of a commodity. Regardless of the offer price, the exporter of a given product to the EC is forced, by the variable import levy, to "sell" at a price equivalent to or above the EC threshold price.[4]

For example, the EC variable import levy for U.S. No. 2 Soft Red Winter Wheat — basis CIF Rotterdam — amounted to U.S.$103 per tonne in crop year 1978–79 and U.S.$76 per tonne in 1983–84. In some years, the variable import levy was actually higher than the U.S. (world) price of wheat, a clear indication of the EC's relatively high price support for its wheat producers. As another comparison, the Canadian Wheat Board set the initial price for No. 1, Canadian Western Red Spring wheat at C$150 per tonne for crop year 1988–89, compared to an estimated support price of C$229 per tonne for wheat in the EC. For barley, the Canadian Wheat Board set the initial price at C$120 per tonne, compared with an estimated EC support price of C$218 per tonne.

The United States has persistently pressed for a more liberal agricultural trading system. Yet it, too, has used a variety of restrictions and contingency laws over the years to restrict imports of farm products.[5] Moreover, the United

4 For a more precise and detailed explanation of the methods used in calculating the variable import levy, see AgraEurope, *CAP Monitor* (London, 1988).

5 For a critical assessment of these restrictions, see D.G. Johnson, "Agriculture and US Trade Policy," in United States, Congress, Senate Committee on Agriculture, *Nutrition and Forestry, Trade Policy Perspectives* (Washington, D.C.: U.S. Government Printing Office, 1984. See also R. de C. Grey, *United States Trade Policy Legislation: A Canadian View* (Montreal: Institute for Research on Public Policy, 1982); and S.L. Lande and G. Van Grosstek, *The Trade and Tariff Act of 1984* (Lexington, Mass.: Lexington Books, 1984).

States has used a significant exemption that the GATT provided it in 1955 — a waiver relating to Section 22 of the *Agricultural Adjustment Act of 1933*, which provide for border controls (mainly quotas) — to implement mandated price-support policies.

Japan, with the highest level of agricultural protection in the world, uses a wide range of trade-restricting measures, including laws on food control, sugar price stabilization, and price stabilization of livestock products. These laws are reinforced by other general trade policies and programs, such as state trading, import quotas for beef, countervailing duties for pork, specific duties, domestic variable levies, and standard import-pricing measures.[6]

Canada, too, uses a large number of measures to restrict agricultural imports.[7] For example, wheat, oats, barley, and their products may be imported without a licence. Under the *Canadian Dairy Commission Act,* the federal government may control imports of any product that would have the effect of interfering with the support price of any dairy product supported under the Act. Import quotas have also been established for supply-managed commodities — eggs, turkeys, and chickens — that come under the jurisdiction of the 1972 *Farm Products Marketing Agencies Act,* while beef and veal imports are controlled under the 1981 *Meat Imports Act.* In addition to controls on the import of specific commodities, Canada has legislation on countervailing and antidumping duties, and imposes duties on a range of imported agricultural and food products.

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6 See Organisation for Economic Co-operation and Development, *National Policies and Agricultural Trade Country Study: Japan* (Paris, 1987).

7 See G.E. Salembier, A.R. Moroz, and F. Stone, *The Canadian Import File: Trade, Protection and Adjustments* (Montreal: Institute for Research on Public Policy, 1987); Organisation for Economic Co-operation and Development, *National Policies and Agricultural Trade Country Study: Canada* (Paris, 1987); and Johnson, Hemmi, and Lardinois, *Agricultural Policy and Trade.*

Trade-Distorting Subsidy Measures

The use of trade-distorting subsidies by surplus-producing countries has grown alarmingly in recent years, as illustrated by the examples of the EC and the United States.

In the EC, export subsidies and the means of financing them have been a part of its Common Agricultural Policy since the early 1970s. Indeed, support for such subsidies has constituted anywhere from one-third to one-half of the EC's agricultural budget during the past decade.

On July 11, 1985, the maximum export subsidy for EC wheat exports amounted to 20.47 ECU (European Community Units), or U.S.$15.29, per tonne, as shown in Table 19. The corresponding export subsidy for barley was 41.75 ECU, or U.S.$31.18, per tonne. These subsidies increased steadily to a peak, on January 29, 1987, of 135.00 ECU, or U.S.$173.53, per tonne for barley. These subsidies are significant, as illustrated by the fact that during much of 1986 and 1987, they were greater than the Canadian Wheat Board's market prices alone for wheat and barley.

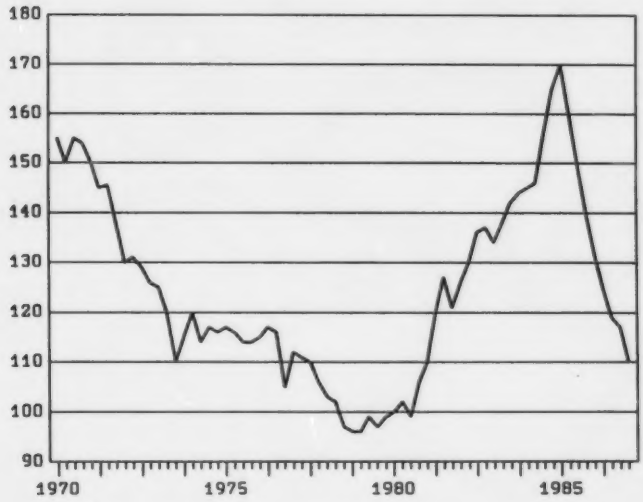
The large swings in the exchange rate of the U.S. dollar since the early 1970s, as shown in Figure 24, have heavily influenced the EC's export subsidies. The decline of the U.S. dollar during the 1970s loomed large among the several factors that caused an export-based boom in U.S. agriculture during that period. Then, during the 1979–85 period, the rapid rise in the U.S. dollar effectively increased the U.S. loan rate for grain well above marketing-clearing levels, reduced the export demand for U.S. farm products, and caused the U.S. domestic price for grain to fall to the loan level. This, in turn, caused a large part of the domestic production that would otherwise have been exported to be diverted as surplus stocks to the Commodity Credit Corporation.

In addition to the domestic consequences, the rise in the U.S. dollar had important implications for foreign competitors, particularly the EC. As one study notes,

Figure 24

U.S. Dollar Exchange Rate, 1970–87

(1980 = 100)



Source: S.W. Hiemstra and M. Shane, *Monetary Factors Influencing GATT Negotiations on Agriculture*, Foreign Agricultural Economic Report 236 (Washington, D.C.: United States, Department of Agriculture, Economic Research Service, April 1988), p. 5.

during the period of the high dollar, U.S. farmers earned the lowest income they had seen since the 1930s, but farmers abroad earned record-high incomes. World grain prices, for example, fell to within 5 percent of the European Community's domestic support price in 1985, an unprecedented event which substantially reduced the normally high cost of the EC agricultural policy.[8]

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8 S.W. Hiemstra and M. Shane, *Monetary Factors Influencing GATT Negotiations on Agriculture*, Foreign Agricultural Economic Report 236 (Washington, D.C.: United States, Department of Agriculture, Economic Research Service, April 1988), p. 5.

Table 19

Maximum Export Subsidies for European Community Wheat and Barley Exports, 1985–89
(ECU per tonne)

	Maximum export subsidy		ECU per
	Wheat	Barley	U.S.$1.00
July 11, 1985	20.47	41.75	1.339
November 7, 1985	75.48	83.99	1.160
February 6, 1986	79.00	101.90	0.982
April 30, 1986	99.99	128.99	0.938
September 25, 1986	120.98	130.00	0.890
October 23, 1986	132.00	130.00	0.866
January 29, 1987	135.00	136.00	0.776
February 26, 1987	133.95	136.99	0.790
August 6, 1987	104.00	104.00	0.789
October 8, 1987	117.50	122.00	0.776
December 17, 1987	132.00	132.00	0.698
January 21, 1988	117.50	119.85	0.716
March 17, 1988	105.95	106.90	0.725
April 14, 1988	104.00	103.75	0.722
June 2, 1988	102.15	97.90	0.740
June 16, 1988	83.00	75.00	0.760
June 23, 1988	79.75	68.77	0.766
July 14, 1988	61.44	51.00	0.794
August 25, 1988	29.50	32.95	0.816
October 5, 1988	58.97	66.90	0.803
December 8, 1988	68.99	76.50	0.746
January 26, 1989	59.50	69.00	0.794

Source: *AgraEurope*, various issues.

The sharp decline in the U.S. dollar after 1985, coupled with lower loan rates under the U.S. *Food Security Act* (1985), also forced the world prices of agricultural commodities to decline. In response to the widening gap between EC support prices and world prices, the EC greatly increased its expenditures on export subsidies for many of its agricultural commodities, particularly grain.

Since the 1950s, the United States has also developed a number of different subsidized export-enhancement programs (EEPs) for agricultural exports.[9] These programs have attempted to increase demand for U.S. agricultural products by effectively lowering prices to enable exporters to compete better in international markets by expanding export demand, and by promoting market access through policy instruments — that is, by lowering barriers to trade.

During the late 1950s and early 1960s, exports under government-financed programs — Public Law 480, Section 416, and Aid for International Development — and commercial exports with export-payments assistance averaged about 50 percent of total U.S. agricultural exports. This proportion declined to only 8 percent during the 1970s. Commercial sales under credit and the Commercial Credit Corporation's barter program increased from 5 percent during the late 1960s and early 1970s to almost 15 percent by the early 1980s.

With the enactment of the *Food Security Act* in 1985, Congress announced the United States' intention to become more aggressive in international markets through the lowering of the U.S. loan rate for domestic crops, the development of targeted EEPs in global markets, and increased export credit and food-aid programs.[10]

By 1986, over 60 percent of U.S. wheat and flour exports were supported through food aid, export-credit programs, and EEPs. Between October 1, 1987, and March 31, 1988, the market value of EEP sales was more than U.S.$1.8 billion, consisting of about 17 million tons of wheat, more than 1 million tons of barley, and smaller amounts of malting barley,

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9 See S.E. Grigsby and C.L. Jabara, *Agricultural Export Programs and U.S. Agricultural Policy* (Washington, D.C.: United States, Department of Agriculture, Economic Research Service, July 1985).

10 M. Smith, *Increased Role for U.S. Farm Export Programs*, Bulletin 515, (Washington, D.C.: United States, Department of Agriculture, Economic Research Service, April 1987).

dairy cattle, flour, frozen poultry, rice, sorghum, table eggs, and vegetable oil.

As of October 1987, the value of EEP subsidies averaged about U.S.$35 per tonne on wheat exports to 25 different countries. The subsidy value of the EEP program averaged $90 per tonne for wheat flour exports, and $39 per tonne for barley exports.

Between May 1985 and May 1988, U.S. EEP sales amounted to $4.9 billion.[11] Major markets targeted for wheat since March 1988 include China, the Soviet Union, India, and Egypt. Markets targeted for EEP barley exports include Tunisia, Saudi Arabia, Algeria, and Israel.

Throughout most of 1988, reductions occurred in the size of both the EC's export subsidies and the United States' export enhancement programs (see Figure 25). Ironically, it appears that the widespread North American drought and the significant rise in world grain prices have done more to reduce these subsidies than the results of the Uruguay Round. What is equally interesting, the "relatively favorable budgetary situation" in the EC for 1989 has been due, in large part, to the greatly reduced expenditures required to support the EC's subsidy program.[12]

Nontariff Barriers to Trade and the Measurement Problem

Negotiations on nontariff barriers to trade are particularly complex because of the difficulty in measuring NTBs. It is relatively easy to quantify the extent of the protection that tariffs provide, but not to find a common denominator for a mix of NTBs such as the EC's variable import levy, Japan's

11 United States, Department of Agriculture, Economic Research Service, *Agricultural Outlook* (Washington, D.C., May 1988); idem, *Outlook for U.S. Agricultural Exports*, December 1, 1987, and May 26, 1988.

12 AgraEurope, January 27, 1989, p. 2.

standard-import pricing program, protection provided to U.S. dairy farmers under Section 22, and Canada's import quotas associated with supply-management programs.

In recent years, a number of attempts have been made to develop common measures of border restrictions and trade-distorting subsidies for the purposes of the multilateral trade negotiations.[13] The most important of these measures have included the Nominal Price Coefficient, the Effective Rate of Assistance, the Producer Subsidy Equivalent, the Consumer Subsidy Equivalent, the Trade Distortion Equivalent, and the Production Entitlement Guarantee. Each of these measures is examined briefly below.

The Nominal Price Coefficient

The Nominal Price Coefficient (NPC) is designed to measure the gap between domestic and international prices. It is defined as the ratio that results from dividing domestic farm prices by the comparable border prices: the higher the ratio, the greater the extent of the protection.

A general indication of the effect of import restrictions and associated domestic policies on farm prices may be noted in Table 20, which shows NPCs for various commodities in selected countries and regions. Clearly, by this measure, Japan has the highest level of protection. In 1988, for example, the NPC for wheat in Japan amounted to 8.00, which means, in effect, that the domestic price for wheat in Japan was eight

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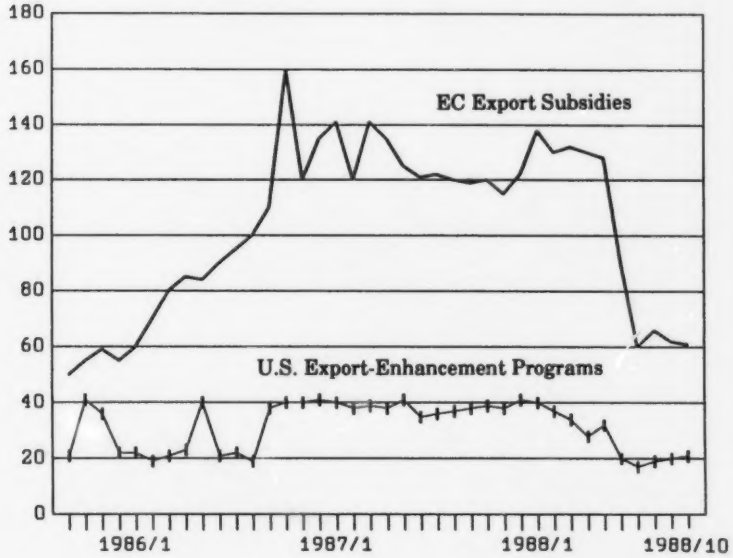
13 The discussion in this section draws on Organisation for Economic Co-operation and Development, *National Policies and Agricultural Trade* (Paris, 1987); United States, Department of Agriculture, Economic Research Service, *Estimates of Producer and Consumer Subsidy Equivalents: Government Intervention in Agriculture 1982–86* (Washington, D.C., April 1988); Webb, *Protection in Agricultural Markets*; World Bank, *World Development Report, 1986* (New York: Oxford University Press, 1986): 112-113; and D. Blandford, *Bringing Agriculture Into the GATT* (New York: Cornell University Press, 1988).

Figure 25

U.S. and European Community Wheat Export Subsidies, 1985–88

(U.S.$ per ton)



Source: United States, Department of Agriculture, Economic Research Service, *Wheat Situation and Outlook Report* (Washington, D.C., November 1988), p. 8.

times higher than the border price. In contrast, the NPC for wheat was 3.40 in the EC, and 2.20 in the United States.

It should be noted that the NPC reflects only price differences among countries; it does not include such domestic transfer payments to producers as transportation and storage subsidies, or deficiency payments. These domestic payments are included in a more comprehensive measure, the Producer

Table 20

Nominal Price Coefficients for Various Commodities in Selected Industrial Market Economies, 1980–82, 1988, and 1995[a]

	Wheat	Coarse grain	Rice	Ruminant meat	Nonruminant meat	Dairy products	Sugar	Weighted average
European Community								
1980–82	1.40	1.40	1.35	1.95	1.25	1.75	1.50	1.55
1988	3.40	2.40	2.40	2.75	1.60	2.50	2.80	2.25
1995	2.60	1.75	2.20	2.50	1.35	2.50	3.00	2.05
EFTA[b]								
1980–82	1.65	1.55	1.00	2.30	1.40	2.45	1.55	1.90
1988	3.90	2.85	1.00	4.25	1.90	3.90	3.20	3.15
1995	2.05	1.55	1.00	4.35	1.65	4.40	3.90	3.35
Japan								
1980–82	3.90	4.30	3.35	2.80	1.50	2.90	3.00	2.35
1988	8.00	11.65	8.20	5.40	1.90	5.55	7.10	3.80
1995	3.90	9.30	9.30	5.15	1.90	6.45	8.55	3.65

Table 20 - continued

	Wheat	Coarse grain	Rice	Ruminant meat	Nonruminant meat	Dairy products	Sugar	Weighted average
United States								
1980–82	1.15	1.00	1.30	1.10	1.00	2.00	1.40	1.20
1988	2.20	1.60	1.85	1.30	1.00	2.20	2.05	1.60
1995	1.30	1.00	1.60	1.30	1.00	2.30	1.95	1.25
All industrial market economies								
1980–82	1.25	1.15	2.50	1.50	1.20	1.90	1.50	1.40
1988	2.45	1.75	5.65	2.05	1.40	2.55	2.60	2.00
1995	1.75	1.20	6.15	1.95	1.30	2.70	2.80	1.80

[a]Ratios for 1980–82 are estimates; those for 1988 and 1995 are projections. The projected ratios are taken from the reference projection described in the text. The weighted averages were calculated using production valued at border prices as weights. Estimates have been rounded to the nearest 5 percent.

[b]European Free Trade Association.

Source: R. Tyers and K. Anderson, "Liberalizing OECD Agricultural Policies in the Uruguay Round: Effects on Trade and Welfare," *Journal of Agricultural Economics* 39 (May 1988): p. 204.

Subsidy Equivalent, which will be examined later and which reveals a relatively higher level of support than the NPC in countries such as the United States and Canada, where direct transfer payments are relatively more important than border protection measures.

The Effective Rate of Assistance

Another way to find a common denominator for a mix of NTBs is the Effective Rate of Assistance (ERA). Figure 26 shows how the ERA works. Case A represents the situation where no NTBs exist on a particular commodity. If one assumes that both the domestic price and the world price are equal, at $100 per tonne, and that the unit cost of producing the commodity at the farm level is $60 per tonne, then the value-added cost beyond the farm gate amounts to $40. The ERA is zero.

In Case B, there is a production-input subsidy — for example, a subsidized interest on credit — equal to $10 per tonne, which reduces the actual outlay by farmers for production costs to $50 per tonne. The production-input subsidy of $10 is then divided by the unit value-added cost of $40, yielding an ERA of 25 percent.

In Case C, farmers receive a $10 production-input subsidy and an additional price subsidy of $40 as a result of a national quota on a similar imported commodity — for a total of $50. This amount is then divided by $40 (the unit value-added cost) to yield an ERA of 125 percent.

The ERA is an improvement over the NPC in that internal subsidies as well as the difference between the domestic price and the border price are included in the final measure of the degree of trade protectionism.[14]

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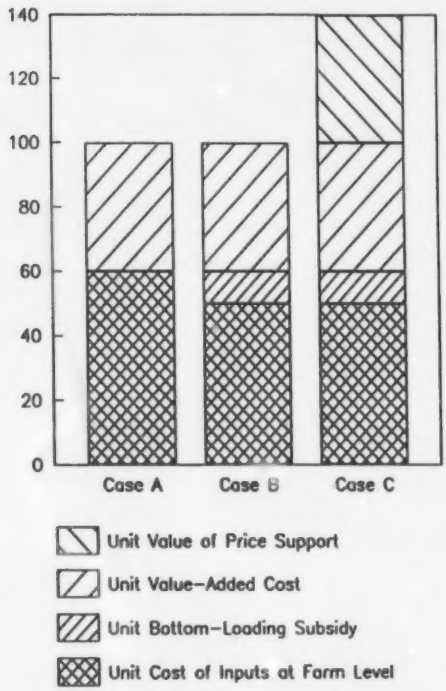
14 For a more detailed analysis of the ERA, see Webb, *Protection in Agricultural Markets*, pp. 16–29.

Figure 26

The Effective Rate of Assistance

(dollars)



Producer and Consumer Subsidy Equivalents

A much more comprehensive approach to the measurement of the cost of agricultural policies — much of which is nontariff in nature — has been undertaken by the OECD and

the U.S. Department of Agriculture.[15] This approach is based on concepts referred to as the Producer Subsidy Equivalent (PSE) and the Consumer Subsidy Equivalent (CSE). A Producer Subsidy Equivalent is generally defined as the level of subsidy in terms of a direct income payment that would be required to compensate agricultural producers for the removal of government support under current programs. The PSE can be further defined as a ratio (percentage) between the total value of policy transfers to producers, and total producer agricultural income — that is, cash farm receipts plus net direct payments.

A Consumer Subsidy Equivalent is defined as the level of subsidy that would have to be paid to consumers to compensate them for the removal of agricultural programs. The CSE can be defined as a ratio (percentage) between the total value of policy transfers to consumers and total consumer expenditures for the agricultural commodity.

PSEs and CSEs can be either positive or negative. A PSE may be positive if producers receive a direct payment from government, and negative if, for example, producers receive less than the competitive market price for their product. Similarly, a positive CSE results when food is subsidized below the competitive market price, while a negative CSE results where, because of an import quota, consumers pay more than the competitive world price for the product.

Table 21 provides OECD estimates of PSEs for various commodities in a number of countries. The table shows that PSEs, as a percentage of producer income, grew considerably between 1979 and 1986 in nearly all of the countries surveyed. For crops, for example, they increased from 41.2 percent to

15 See Organisation for Economic Co-operation and Development, *Monitoring and Outlook for Agricultural Policies, Markets and Trade* (Paris, May 1988); United States, Department of Agriculture, Economic Research Service, *Estimates of Producer and Consumer Subsidy Equivalents;* and idem, *Agriculture in the Uruguay Round: Analyses of Government Support* (Washington, D.C., December 1988).

60.5 percent in the European Community, from 13.7 percent to 53.5 percent in Canada, from 8.2 percent to 47.2 percent in the United States, and from an already huge 77.7 percent to 92 percent in Japan.

While the PSE does provide a general measure of the relative importance of government (and consumer) support for agriculture in the form of a great variety of programs, some caution has to be exercised in its interpretation and use.[16] For example, a PSE of 50 percent can have a wide variation in absolute terms. If producers in country A have an average total income of $30,000, a PSE of 50 percent means that $15,000 of that income comes from government payments or transfers from consumers. In country B, where the average total income per producer amounts to $16,000, a PSE of 50 percent means that $8,000 comes from government or consumers.

In addition, the PSE depends on concepts, definitions, and measurement standards used to quantify a multitude of support programs available to farmers which are difficult to define at the best of times.[17]

The Trade Distortion Equivalent

While the PSE and CSE measures represent a comprehensive coverage of various agricultural support programs, they have several limitations, the major one being that no systematic distinction is made between those farm support programs which are trade distorting and those which are not. It was for this reason that still another measure, the Trade Distortion Equivalent (TDE), has been developed.

The TDE, in its simplest form, builds on the PSE and CSE to generate a net trade-distorting effect. The general idea be-

16 The OECD noted several cautions and reservations in its first report on PSEs. See *National Policies and Agricultural Trade*, pp. 103–115.

17 See D. McClatchy, *The Concept of Producer Subsidy Equivalent* (Ottawa: Department of Agriculture, 1987).

Table 21

Producer Subsidy Equivalents by Country and Commodity, 1979–86

(as a percentage of producer income)

	1979	1980	1981	1982	1983	1984	1985	1986
Australia								
Crops	3.4	4.8	8.2	14.7	8.2	8.7	12.7	18.4
Livestock products	16.1	16.3	15.3	17.3	17.2	15.3	16.7	14.1
All products	10.3	11.5	12.3	16.6	13.5	12.8	15.3	15.3
Austria								
Crops	37.7	23.3	11.3	21.0	20.8	11.6	16.5	n/c
Livestock products	37.0	40.4	46.8	43.3	48.7	47.0	41.8	n/c
All products	37.2	35.1	36.8	36.3	40.6	36.5	34.1	n/c
Canada								
Crops	13.7	14.8	16.2	19.7	19.2	25.2	39.7	53.5
Livestock products	31.2	31.0	30.4	30.9	35.7	37.4	39.5	39.3
All products	23.7	23.5	23.5	25.8	27.7	31.9	39.6	45.7
European Community[a]								
Crops	41.2	18.2	23.6	32.1	25.6	17.9	37.0	60.5
Livestock products	45.3	42.7	34.5	32.8	37.1	36.7	40.7	45.4
All products	44.3	36.4	31.7	32.6	34.2	31.4	39.7	49.3
Japan								
Crops	77.7	70.0	64.4	76.7	79.4	80.8	84.5	92.0
Livestock products	44.8	36.0	39.6	38.4	43.7	43.5	42.7	52.3
All products	64.3	54.3	53.1	59.4	63.3	64.9	66.7	75.0

Table 21 - continued

	1979	1980	1981	1982	1983	1984	1985	1986
New Zealand								
Crops	1.8	3.6	10.4	13.1	7.8	8.5	9.7	14.6
Livestock products	15.3	16.2	23.4	26.0	36.6	17.7	19.6	31.8
All products	14.9	15.7	22.8	27.4	35.3	17.3	19.0	31.1
United States								
Crops	8.2	9.2	11.5	13.6	30.1	21.4	26.2	47.2
Livestock products	19.9	18.9	22.6	20.0	23.1	24.7	26.1	27.0
All products	14.7	14.5	17.7	17.1	26.5	23.3	26.1	35.4
Average[b]								
Crops	30.1	21.2	23.5	28.4	34.9	30.8	39.9	61.3
Livestock products	34.6	32.6	29.9	26.0	31.8	31.6	34.0	38.3
All products	32.9	28.3	27.5	26.1	33.1	31.3	36.3	47.0

n/c = not calculated.

[a]All present members of the EC except Portugal and Spain.

[b]Weighted average of the countries that appear in the table.

Source: Organisation for Economic Co-operation and Development, *Monitoring and Outlook of Agricultural Policies, Markets and Trade* (Paris, May 1988).

hind the TDE concept is that trade negotiations should deal only with those domestic farm programs that have a trade-distorting effect on other countries; other domestic programs judged to have no trade-distorting effect should be of internal concern only to the countries involved.[18]

This seems reasonable enough, and the TDE has enormous appeal from both a conceptual and a practical point of view. The measure has limitations that should not be ignored, however, including the fact that an enormous number of sophisticated analyses are required to develop a practical basis for its application in the trade negotiations.[19]

The Production Entitlement Guarantee

Still another concept proposed as a way of coping with the trade-distorting effects of agricultural support programs under the trade negotiations is the Production Entitlement Guarantee (PEG).[20] This concept is designed to provide a basis or mechanism with which to support farm incomes while minimizing the trade-distorting effect of such support.

The use of the PEG would require the following:

- establishment of a PEG production quantity for each country that would be less than that which would be produced under multilateral free trade prices;

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18 For an attempt at classifying support programs that are trade distorting in effect and thus should be subject to negotiation in the Uruguay Round, see W.M. Miner and D.E. Hathaway, eds., *World Agricultural Trade: Building a Consensus* (Halifax, N.S.; Washington, D.C.: Institute for Research on Public Policy and Institute for International Economics, 1988), pp. 96–106.

19 See McClatchy, *The Concept of Producer Subsidy Equivalent*.

20 See D. Harvey, *The GATT and Agriculture: The PEG Option* (Newcastle: University of Newcastle-upon-Tyne, Department of Agricultural Economics and Food Marketing, 1989).

- determination of the level of income transfers through a fixed domestic support price for the PEG quantity; and
- elimination of all border and domestic support measures (other than the PEG), so that consumer prices would equal world market prices.

Under the PEG system, each farmer's actual production would be unconstrained; the production would be influenced, in part, by the PEG support price and by competitive world prices beyond the PEG production amount.

The PEG concept has obvious limitations, such as the difficulty in determining the level at which the PEG quantity should be set globally, nationally, and for each commodity, and the fact that the cost of the PEG support program would be shifted, in many cases, from consumers to taxpayers. Nevertheless, it is an approach that deserves serious discussion in the Uruguay Round.

Measures of Agricultural Support Programs and the Trade Negotiations

There are several ways in which the various measures of agricultural support programs could be used in the trade negotiations:

- to quantify global, national, and commodity issues as a starting point for the trade negotiations;
- as the basis and the mechanism for connecting trade-distorting support programs to tariff equivalents that could then be negotiated in ways similar to those of previous GATT rounds;[21]

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21 See, for example, G.C. Hufbauer and J.J. Schott, *Trading for Growth: The Next Round of the Trade Negotiations* (Washington, D.C.: Institute for International Economics, September 1985), pp. 15–17; and Miner and Hathaway, *World Agricultural Trade*, pp. 64–65.

- as instruments to be used in the actual trade negotiations; and
- as instruments to be used in monitoring progress in the rollback of trade-distorting support programs.

Should these measures, for negotiating purposes, be restricted to an aggregate level of support at the national level, leaving each country with the responsibility of deciding what specific commodity or program changes would be required to meet the aggregate national commitment under the negotiations? Or should the measures be program or commodity specific?

Studies relating to these questions and experience to date suggest that the most acceptable approach would be to measure the aggregate national level of support, and to focus, for the most part, on trade-distorting agricultural support programs.[22]

As we have seen, each measure has limitations, and there is no obviously clear, easy, and acceptable way of developing a common denominator to determine the effects of the variety of agricultural support policies and programs that underlie current trade conflicts. Difficulties of measurement notwithstanding, however, trade negotiations involving NTBs will be formidably complex and controversial without some sort of yardstick. It seems that some "aggregate measure of support" will have to be developed, even one with limitations, if meaningful progress is to be made in the Uruguay Round.

Negotiating Strategies in the Uruguay Round

Paradoxically, while agricultural trade conflicts have received much attention during the past several years, the

22 See, for example, McClatchy, *The Concept of Producer Subsidy Equivalent.*

major trading countries, through various international bodies, undertook an enormous amount of constructive background work in preparation for the launching of the Uruguay Round of negotiations in 1986. This preparatory work anticipated the basic issues that will have to be tackled if meaningful agricultural trade reform is to be achieved.[23]

Two major players, in particular, were central to the preparations for the new round: the Committee on Trade in Agriculture (CTA) of the GATT, and the joint endeavors of the OECD's Trade Committee and Committee for Agriculture.

In November 1982, the Contracting Parties to the GATT issued a Ministerial Declaration that provided for the establishment of the CTA. The CTA was given the task of examining all measures affecting trade, market access, and competition and supply in agricultural products, including subsidies and other forms of assistance in light of the objectives, principles,and relevant provisions of the GATT, and to make recommendations to the 1984 Session of the Contracting Parties. Accordingly, at that session, the CTA made — and the Contracting Parties adopted — the following general recommendations:

> The conditions should be elaborated under which substantially all measures affecting trade in agriculture would be brought under more operationally effective GATT rules and disciplines, with particular reference (1) to improving terms of access to markets, (2) to bringing export competition under greater discipline, (3) to reinforcing the linkages under Articles XI and XVI between national policies and trade measures in a manner which more clearly defines the limits to the impact of domestic agricultural policies on trade, and (4) to more effectively implementing in relation to trade in agriculture, the GATT provisions providing for

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23 See T.K. Warley, "Issues Facing Agriculture in the GATT Negotiations," *Canadian Journal of Agricultural Economics* 35 (November 1987).

differential and more favourable treatment for developing countries.[24]

These recommendations provided the foundation for the detailed provisions included in the Ministerial Declaration that initiated the Uruguay Round in September 1986.[25]

Another extremely important part of the preparatory work leading up to the launching of the Uruguay Round were the major country studies undertaken by the OECD. In May 1982, the OECD requested the Committee for Agriculture and the Trade Committee to undertake jointly a major study of national policies and agricultural trade. The two committees then prepared a major synthesis report and separate in-depth country studies of Australia, Canada, the EC, Japan, New Zealand, and the United States. The synthesis report was approved at an OECD Council meeting at the Ministerial level in May 1987.[26]

These reports are important for several reasons. First, the in-depth country studies provide a detailed examination and analysis of national agricultural policies and their linkages with trade. Second, they use Producer and Consumer Subsidy Equivalents to quantify the extent of the support provided by the multiplicity of national agricultural policies and programs. And, third, they use the PSE and CSE concepts to measure the impact on individual countries and major commodities of the liberalization of agricultural trade.

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24 General Agreement on Tariffs and Trade, Contracting Parties 40th Session, *Ministerial Declaration*, L/5753, Geneva, December 20, 1984.

25 See Warley, "Issues Facing Agriculture in the GATT N. tiations," p. 517; "Uruguay Round of Multilateral Trade Negotiation ` *GATT Focus* (October 1986); "The GATT Uruguay Round: The Agri. cural Issues," *AgraEurope* (November 1987); and General Agreement on Tariffs and Trade, Committee on Trade in Agriculture, AGW/9/Rev.3, Geneva, June 4, 1986.

26 Organisation for Economic Co-operation and Development, *National Policies and Agricultural Trade.*

The studies provided the basis for a communiqué issued in May 1987, in which the OECD countries reiterated and reaffirmed their commitment and determination to proceed with the basic objectives of the Uruguay Round.[27]

The fact that a vast chasm appears to separate the Uruguay Round objectives and commitments from the ensuing events and realities — the continuation of agricultural trade conflicts and the widely divergent agricultural negotiating positions tabled with the GATT in 1987 — reflects the basic ambivalence that underlies the current negotiations. On the one hand, the major trading countries recognize the urgent need for global agricultural trade reform; this recognition is reflected in their repeated public endorsement and support of the Uruguay Round of negotiations. At the same time, they appear extremely reluctant to accept the substantial changes in domestic farm policies that would be the inevitable consequences of major trade reform.

Uruguay Round Negotiating Positions

In this section, we will briefly examine the initial negotiating positions on agriculture of four participants in the Uruguay Round: the United States, the EC, Japan, and the "Cairns Group" of agricultural producers.[28]

The United States' Position

In its initial negotiating paper tabled with the GATT on July 6, 1987, the United States suggested that the negotia-

27 Warley, "Issues Facing Agriculture in the GATT Negotiations," p. 518.

28 For more detailed analyses of these initial negotiating positions, see "The GATT Uruguay Round: The Agricultural Issues," *AgraEurope* (November 1987); Miner and Hathaway, *World Agricultural Trade*, pp. 61–63; and M.A. Tutwiler and G.E. Rossmiller, *Prescriptions for Success in the GATT* (Washington, D.C.: Resources for the Future, December 1987).

tions should have three major objectives: a complete phaseout over ten years of all agricultural subsidies that directly or indirectly affect trade; a phaseout over ten years of all import barriers to trade; and harmonization of all health and sanitary regulations based on internationally recognized standards.

The U.S. proposal includes a two-tier approach to the negotiations. The first tier would involve the adoption of some measure of the aggregate level of agricultural support — excluding trade-neutral policies — for each country, and a commitment to reduce that aggregate level to zero over a ten-year period. In the second tier, each country would identify the specific policy changes that would be used to achieve the aggregate reduction in support.

The European Community's Position

The basic premise of the EC's proposal is that the principles of its Common Agricultural Policy are not negotiable. Beyond that, the EC proposes that negotiations on other matters take place in two stages. First, there would be a short-term period during which there would be an immediate freeze on export subsidies and levels of support for surplus products, and some agreement to reduce production and to withdraw specified quantities of surplus products from the international marketplace with the objective of stabilizing international markets and prices. In the long term, national agricultural subsidies would be phased down, direct payment to farmers would replace, to some degree, commodity-based price supports, and agricultural producers would become more sensitive to market signals.

In general, the EC would agree to a considerable reduction in the level of agricultural support, but it is not prepared to see government totally out of agriculture. The EC's proposal specifies neither the ultimate level of reduced support nor a time schedule for that reduction.

Japan's Position

In general, Japan proposes that its major western trading partners freeze, then phase out, agricultural export subsidies over a fixed period of time. But Japan's plan draws a sharp distinction between domestic subsidies needed for food security, and export subsidies that, by their nature, are obstacles to the stability and expansion of agricultural trade.

The Japanese proposal leaves room for import restrictions to be included in the negotiations, but stresses that market forces must be balanced with the need both to guarantee national food security and to recognize the unique social aspects of rural communities in each country.

It is to be noted that Japanese support for the phasing out of agricultural export subsidies, while important in the GATT negotiations, will not likely be accepted by other trading countries as a *quid pro quo* for Japan's retaining its import controls.

The Cairns Group's Position

The "Cairns Group" — formed by 13 countries[29] that met at Cairns, Australia, in August 1986 to discuss an approach to the Uruguay Round, the Group refers to itself as the "Alliance of Fair Traders" — has developed a strategy that, in effect, represents an opposing balance to the agricultural trading policies and practices of the EC and the United States.

The Group's original negotiating position, developed in October 1987, was based on the following three-phase plan:

- an initial freeze or moratorium on domestic agricultural support and export subsidies;

29 The 13 members of the Cairns Group are: Argentina, Australia, Brazil, Canada, Chile, Columbia, Hungary, Indonesia, Malaysia, New Zealand, the Philippines, Thailand, and Uruguay.

- the gradual reduction and reform of national farm support and trading practices over a ten-year period; and
- the development of a framework of rules governing international agricultural trade, to come into effect at the end of the ten-year reform program.

Achieving consensus on phase two, the reform program, has been the aim of the Cairns Group's members over the past year. Negotiations have focused on the development of a common measure of the diverse policies that have distorted consumption, production, and trade. While the Group adopted the Producer Subsidy Equivalent as a starting point, it has had reservations about the limitations associated with this measure. Canada, in particular, has stressed from the outset the need to focus on trade-distorting policies and programs and has suggested, accordingly, that the Trade Distortion Equivalent be used instead.

In July 1988, the Cairns Group reaffirmed the basic positions developed in its original negotiating proposal, and elaborated on its proposed "framework approach" to the Mid-term Review of the multilateral trade negotiations. The proposal calls for a 10 percent cut in trade-distorting agricultural support programs in each of 1989 and 1990. Exactly how this reduction in support would be achieved in each country, however, has been the subject of some debate within the Group. An initial draft of the proposal reportedly called for across-the-board cuts in all trade-distorting subsidies, which would have posed problems for highly protected sectors in some countries, such as the dairy industry in Canada.

The final compromise proposal, released in July 1988, reflects the "aggregate" approach put forward by Canada, which would allow individual countries to decide where the cuts would occur to achieve 10 percent reductions in overall levels of farm support. When the proposal was issued, Canada's federal Minister of Agriculture stated that it would

not undermine Canada's control over the operation of national supply-management programs, as provided for under GATT rules.

The difficulties in achieving a consensus on agricultural trade reform proposals, even among the Cairns Group of like-minded countries, are indicative of the major challenges to be faced in the broader multilateral arena. The negotiations within the Cairns Group have made clear the types of tradeoffs and choices that will be necessary if Canada is to make a meaningful contribution to the reform process.

Possible Strategies for Reform

Moving from the tabled negotiating positions to freer and fairer agricultural trade will be a difficult process, given the fundamental differences apparent in the objectives and commitments of the four major negotiating parties.

Before evaluating the prospects for reform, however, it may be useful to examine the reform process itself and how it is likely to evolve. Success in achieving reform, if possible at all, undoubtedly will depend on some combination of the following four reform strategies: confrontation and retaliation; the competitive-market solution; market management; and incrementalism.[30]

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30 For further discussions of negotiating strategies for agricultural trade reform, see D.E. Hathaway, "Agricultural Trade Policy for the 1980s," in W.R. Cline, ed., *Trade Policy in the 1980s* (Washington, D.C.: Institute for International Economics, 1983); idem, *Agriculture and the GATT: Rewriting the Rules* (Washington, D.C.: Institute For International Economics, 1987); Tutwiler and Rossmiller, *Prescriptions for Success in the GATT*; Hufbauer and Schott, *Trading for Growth*; Organisation for Economic Co-Operation and Development, *National Policies and Agricultural Trade*; and R.L. Paarlberg, "Responding to the CAP: US Objectives and Policy Options," in Curry Foundation, *Confrontation or Negotiation: United States Policy and European Agriculture* (Washington, D.C., 1985).

Confrontation and Retaliation

The confrontation-and-retaliation approach to agricultural trade policy reform, like military warfare, basically involves a struggle between and among protagonists. Given the destructive forces associated with modern military warfare, it is acknowledged that a full-scale conflict would destroy the aggressors, the besieged, and innocent parties alike.

In many ways, confrontation and retaliation have characterized agricultural trading relations during the past decade. The pre-emptive strikes, increasing conflicts, and mounting casualties that have marked agricultural trade since the end of the Tokyo Round in 1979 have all the earmarks of a war — if not a catastrophic war, certainly one of attrition. The cost has been enormous and peace is not in sight.

In some ways, the announcement of the Uruguay Round in September 1986 was a call for mutual disarmament. There was a collective recognition by the GATT members that the global political and economic instability that will almost certainly result from an agricultural trade system built on anarchy and a continuing war of attrition — where political and fiscal power determine the outcome of global events — is not acceptable.

If confrontation and retaliation are not acceptable alternatives, what other approaches to trade reform are feasible and acceptable?

The Competitive-Market Solution

The competitive-market solution is the basis on which traditional trade theory has been developed. This is the general premise underlying the Articles and principles of the GATT, and it is the general framework within which the United States presented its initial agricultural negotiating position to the GATT in 1987.

On economic grounds, one can make a powerful case for a more market-oriented trade policy. The lack of market orientation in agricultural trade policy has led to some bizarre and irrational farm policies, and to results that are enormously costly and increasingly unacceptable. On the positive side, a market-oriented trade policy serves to impose international discipline on the efficient use of resources among countries, and provides the basis for the systematic integration of national farm policies with the international marketplace.

A market-oriented trade policy, however, calls for the dismantling of many of the existing national agricultural policies — policies which have been developed to protect farmers' prices and incomes. Basically, greater market discipline in agricultural trade means, to a substantial degree at least, placing national farm policies in a subordinate position to market-determined trade policies. It is not conceivable, in the short term at least, that many national governments have the will or political capacity to undertake a reform of this scope.

This political difficulty could be resolved, in part, by "decoupling" farm-income support from particular commodities or production practices. Decoupling would be achieved when government support that a producer receives has no direct connection with or direct influence on production decisions. Decoupling does not necessarily preclude some form of direct payment to an individual producer, providing that the support payment does not interfere with the producer's decision on what and how much to produce or with the consumer's decision on how to allocate a food budget among various food products. The decoupling definition, by implication, indicates that resources in farm production (and food consumption) should be allocated in accordance with the competitive forces of demand and supply in the marketplace.

The objective of decoupling would be to convert present commodity-price-support programs into the equivalent of some form of direct income payment to producers. This would

continue to ensure support to producers, while leaving the allocation of agricultural resources to the market system. In this way, the market system essentially would dictate the nature of international production, trade flows, and prices. Accordingly, this new framework would eliminate the need for border restrictions, export subsidies, and other forms of trade-distorting devices that have multiplied during the past two decades.

There will be national political issues connected with decoupling, but it is a concept that deserves serious consideration by all countries participating in the Uruguay Round of GATT negotiations. Decoupling represents a compromise between a more market-oriented trade policy on the one hand, and the ability of countries to protect the incomes of their farmers on the other.

The Managed-Market Approach to Trade

While the EC's initial negotiating position, tabled with the GATT in 1987, recognizes the need for greater "market signals" in agricultural trade, the EC emphasized the need for some form of market-sharing arrangement coupled with an agreement by major exporters to manage agricultural production and trade.

This is not the first time that the EC has advocated this approach in trade negotiations.[31] It made similar proposals during the Kennedy and Tokyo Rounds, only to have them rejected by the United States and other parties anxious to see more fundamental changes to its Common Agricultural Policy.

Not only do those who are most serious about trade reform dismiss a managed-trade approach, but it is also difficult to implement such arrangements. In previous attempts to manage trade in the grain, dairy, and bovine meat sectors, it

31 M. Tracy, *Agriculture in Western Europe*, 2nd ed. (London: Granada, 1982), pp. 276*ff*.

was found that although the arrangements were useful fora for the exchange of information, they were an ineffective means of exercising discipline over international commodity prices and markets.

The Incrementalist Approach

The incrementalist approach is a far from satisfactory way to trade reform from an economic point of view, but may be a feasible one from a political standpoint. An essentially incrementalist approach has achieved major tariff reductions over a period of nearly 30 years. The reduction of nontariff barriers to trade, however, will be a far more complex task than that associated with tariff negotiations.

Several interesting variants on the incrementalist approach to trade reform have emerged recently. One is the "quota auction",[32] which would operate as follows. Quantitative restrictions in the form of quotas would be auctioned off annually to potential suppliers (exporters) of the product. The revenue from the auction would then be used to help the "protected industry" in the importing country to adjust to a more liberalized trade situation. Over time, more quotas would be auctioned, which would reduce the annual value of the receipts and, hence, the protection available in the importing country. Negotiations would focus on the size of the initial quota for each country, the agreed amount of the phasedown over a specified period, and whether the quota would be phased out entirely or reduced to some specified minimum level of protection.

Given the scope and magnitude of current agricultural trade problems, incremental change, even if in the direction of more liberalized trade, would mean the reduction of current costs and trade distortions only over a long time — not much

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32 See Haufbauer and Schott, *Trading for Growth*.

consolation for those countries badly hurt by the trade conflicts. The escalation in trade conflicts since September 1986 indicates, however, that even an incremental approach to a reduction of nontariff barriers to trade would be an improvement over the status quo.

GATT Rules and Agricultural Trade Reform

GATT rules as applied to agricultural trade have been so qualified and circumscribed, or even ignored, that they are almost totally ineffective in bringing any discipline to global trade in agricultural products.[33] Unless and until these rules are revised in a way that addresses the increasing array of nontariff barriers that have bedeviled agricultural trade in years, there will be no effective framework within which predictable, fair, universally acceptable, and transparent agricultural trade practices can be developed. As one observer notes,

> if there are to be GATT rules for agricultural trade that work, there have to be agreed-upon rules for all domestic programs relating to agriculture, not just tariffs, quotas, and direct export subsidies.[34]

Fortunately, the Uruguay Round Declaration and most of the national negotiating positions tabled with the GATT recognize and support the need for a revised set of GATT rules.

Persuasive arguments have been made that "the rules should be renegotiated to reflect the situation that would prevail on implementation of the aggregate commitments."[35] The logic of this proposal is that rules should be adapted to changing circumstances and to the actual results of the negotiations if they are to be meaningful and to command the support of the Contracting Parties. The danger is that the

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33 See "The House that GATT Built," *The Economist*, March 19, 1988.
34 Hathaway, "Agricultural Trade Policy for the 1980s," p. 445.
35 Miner and Hathaway, *World Agricultural Trade*, p. 89.

rules will tend to be shaped to justify the end results, not to guide the negotiations to a desirable conclusion.

Perhaps a clear and unequivocal set of *a priori* principles and articles should be set out in advance to guide the final negotiations toward an ideal, or at least highly desirable, set of conditions. If, at the end of the current negotiations, the results fall short of the ideal, let those shortcomings be viewed as departures from the articles and principles, and thus subject to further negotiation, not as a way of bending the rules.

Benefits and Adjustments Associated with Liberalized Agricultural Trade

Several studies have analyzed the effects of agricultural trade liberalization on producers, consumers, and taxpayers in various countries.[36] While they examine a wide variety of commodities and regions at different times, the studies suggest that food consumers in Western Europe and Japan would receive substantial benefits, while the agricultural producers would incur losses; that the reverse situation would appear to hold for the majority of the developing countries; and that agricultural price changes would vary considerably from country to country and from commodity to commodity, but

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36 See A. Valdès, "Agriculture in the Uruguay Round: Interests of Developing Countries," *World Bank Economic Review* 1 (September 1987); L.A. Winters, "Measuring the Economic Costs of Farm-Support Policies" (Paper presented to an International Meeting convened by Wilton Park, the Trade Policy Research Centre, and the Australian Bureau of Agricultural Economics, Steyning, Sussex, U.K., May 1987); Institute for Applied Systems Analysis, *Options*, No. 1–2, 1987; R. Tyers and K. Anderson, "Liberalizing OECD Agricultural Policies in the Uruguay Round: Effects on Trade and Welfare," *Journal of Agricultural Economics* 39 (May 1988); G. Miller, *The Political Economy of International Agricultural Policy Reform* (Canberra: Australian Government Publishing Service, 1987); and World Bank, *World Development Report, 1986*.

that overall international food prices would both tend to increase and to be more stable.

One study, by Tyers and Anderson, examines what might have happened to domestic producer prices during the 1980–82 period if agricultural protection had been removed in all industrial market economies. The study concludes that:

- the most pronounced reductions in domestic prices would have occurred in Japan, where, for example, the prices of ruminant meat and wheat would have dropped by 55 percent and 72 percent, respectively;
- the smallest domestic price reductions would have occurred in the United States, where wheat prices would have declined by 5 percent, while the price for ruminant meat would have increased by 16 percent;
- the price effect is less when all countries reduce agricultural protection than when one country reduces protection unilaterally. For example, the price for dairy products would have declined by 24 percent in the EC and 36 percent in the United States if those two producers had cut agricultural support unilaterally, while the price reductions would have been 8 percent and 19 percent, respectively, if agricultural support had been cut multilaterally.

The study also indicates that, in the developed countries, agricultural trade liberalization in 1980–82 would have led to a total net loss to producers of U.S.$58 billion and a net economic welfare gain of U.S.$20.3 billion (see Table 22). By far the largest loss to producers would have occurred in the EC (U.S.$35.3 billion), while the next largest loss would have occurred in Japan (U.S.$19.3 billion). These relatively large producer losses simply reflect the high levels of farm price support that have prevailed in those two areas. For the same period, there would have been a modest gain for U.S. producers and a slight loss for Canadian producers. Producers in the developing countries would have been the largest

Table 22

Global Welfare Effects of Liberalizing Food Policies, 1980–82

(1985 U.S.$ billions per year)

	European Community		Japan		United States		All industrial market economies	
Market affected	Producer welfare	Net economic welfare	Producer welfare	Net economic welfare	Producer welfare	Net economic welfare	Producer welfare	Net economic welfare
European Community	-47.3	8.9	4.8	-1.1	5.2	-0.9	-35.3	7.5
EFTA[a]	0.9	-0.1	0.4	-0.1	0.5	-0.1	-7.0	1.7
Japan	0.7	-1.4	-20.6	9.0	0.3	-0.2	-19.3	5.5
United States	11.6	-0.1	3.7	-0.4	-16.9	3.2	0.2	2.7
Canada	1.5	0.2	0.4	0.0	0.5	-0.1	-0.6	0.7
Australia	1.8	0.8	0.4	0.2	0.4	0.1	2.3	1.2
New Zealand	0.9	0.6	0.3	0.2	0.5	0.3	1.7	1.0
All industrial countries	-30.0	8.9	-10.6	7.8	-9.5	2.4	-58.0	20.3
All developing countries	16.2	-2.3	8.4	-0.9	3.7	-2.1	26.3	-2.3
Centrally planned European economies	4.5	-1.6	1.5	-0.5	2.3	-0.7	7.0	-1.8
World total	-9.3	5.0	-0.7	6.4	-3.5	-0.4	-24.7	16.2

Note: The effect on consumer-*cum*-taxpayer welfare can be obtained by subtracting the producer welfare effect from the effect on net economic welfare.

[a]European Free Trade Association

Source: R. Tyers and K. Anderson, "Liberalizing OECD Agricultural Policies in the Uruguay Round," *Journal of Agricultural Economics* 39 (May 1988): p. 211.

gainers (U.S.$26.3 billion), while overall net economic welfare in those countries would have declined by U.S.$2.3 billion.[37]

Another study, by the OECD, suggests some rather different results.[38] It indicates that production and volume of trade for exported commodities would fall under trade liberalization, while the world price for most commodities would rise. The major exceptions would be wheat and coarse grains, the prices of which would fall slightly, primarily because of the relaxation of the acreage set-aside program in the United States and a reduction in the level of reserve stocks held in the developed countries.

In general, the evidence indicates that a comprehensive reform of domestic agricultural and trade policies would mean considerable gains for taxpayers and consumers in most countries. There is little doubt, however, that the liberalization of agricultural trade would require significant adjustments in trade-distorting forms of domestic agricultural policies. This suggests that trade-neutral, income-support programs might have to be used to replace trade-distorting programs, and that the required adjustments would have to be phased in over a long period of time if meaningful agricultural trade reform is to be achieved.

The GATT Midterm Review

There can be little doubt about the strategic importance of the Midterm Review of the GATT Uruguay Round that was

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37 It should be noted that Tyers and Anderson use a measure of protectionism that is based on nominal rates of protection — that is, the ratio of domestic prices to international prices. This measure does not necessarily reflect direct transfer payments to producers, as is the case in the United States and Canada.

38 Organisation for Economic Co-operation and Development, *National Policies and Agricultural Trade*, pp. 137–171.

held in Montreal in December 1988. The Toronto Economic Summit, held in June 1988, underlined this importance:

> In agriculture, continued political impetus is essential to underpin the politically difficult efforts at domestic policy reform and to advance the equally difficult and related process of agricultural trade reform.[39]

In general, the Midterm Review had two important objectives: to review and endorse progress made on the multilateral trade negotiations at the midway point of the Uruguay Round; and to provide, from the Ministerial level, guidelines and directives for, and to add political impetus to, the negotiations during the remaining two years.

During the Midterm Review itself, further urgency was injected into the negotiations by major statements from the president of the World Bank and the managing director of the International Monetary Fund.[40] Both of these world bodies stressed the critical importance of the trade negotiations to global economic growth, particularly in the developing countries, and to world financial stability.

The Results of the Midterm Review

While there was substantial agreement in such areas as nontariff measures, tropical products, tariffs, subsidies and countervailing measures, dispute settlement, and the functioning of the GATT system, participants in the Midterm Review could come to no agreement on agriculture, textiles and clothing, safeguards, and protection of intellectual property rights.

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39 "Toronto Summit Communiqué," *IMF Survey* (International Monetary Fund), June 27, 1988.

40 *IMF Survey* (International Monetary Fund), December 12, 1988.

The most visible and most troublesome negotiations concerned agriculture. In essence, the United States, which insisted on the elimination of all trade-distorting agricultural subsidies over a specified period of time, could not reach agreement with the EC, which continued to argue for a reduction of all trade-distorting subsidies over an unspecified time period. In addition, the EC pressed for some immediate, short-term measures to cope with current agricultural trade problems, while the United States would not agree to short-term measures prior to agreement on the more fundamental, long-term measures required for agricultural trade reform.

In the end, the Midterm Review was adjourned until early April 1989, when the Trade Negotiations Committee would meet again in Geneva in an attempt to reach agreement on the four sectors that remained unresolved at the Montreal meeting. The agreements reached on the other sectors were put on hold pending the outcome of the April meeting in Geneva.

Considering the high expectations about the outcome of the Midterm Review, the Montreal meeting could be judged a failure. At the minimum, progress on the trade negotiations was seriously slowed down, if not damaged, by the lack of agreement on substantive issues. Moreover, the meeting failed to produce either a strong political impetus or clear guidelines or directives for the remaining two years of the negotiations. The overall lack of agreement and progress at the Midterm Review led to one observer's much-publicized comment that "the GATT is dead."[41]

A more constructive interpretation of the results of the Midterm Review is that, failures notwithstanding, major progress was made in several key areas of the trade negotiations and that there is sufficient time remaining under the Uruguay Round schedule to tackle the unresolved issues. It

41 Lester Thurow, quoted in "GATT and the Uruguay Round: The King's Horses to the Rescue," *The Economist*, February 11, 1989, p. 66.

remains clear, however, that issues associated with the agricultural sector continue to be central to the overall trade negotiations.

The Prospects for Reform

Trade liberalization and agricultural policy reform are urgently needed. From a budgetary point of view, the national costs of growing protectionist policies have been enormous. The prospects for the economic development of the less-developed countries, particularly those burdened with large external debts, are not bright in the absence of trade-driven economic prosperity in the global economy. In general, the emergence of highly protectionist agricultural policies during the past decade has resulted in a gross inefficiency in resource use in the world agricultural economy. These policies also have not resolved chronic hunger and malnutrition in many parts of the world, and they have done remarkably little to resolve the more fundamental agricultural problems even in the developed countries.

One cannot be sanguine, however, about the prospects for major reform of national agricultural policies and the liberalization of agricultural trade in the near future. A major reason lies in the fact that, as various studies have shown, the benefits of agricultural trade liberalization accrue to widely disparate groups: food consumers in Europe and Japan; farmers in the developing countries; and taxpayers in the subsidizing countries. The costs of dismantling current agricultural-support measures would be concentrated primarily among producers in the developed world, whose interests in the present system are often highly entrenched.

The EC's Common Agricultural Policy (CAP) is deeply rooted in a set of political, economic, and social circumstances stretching back to the end of World War II. The principles of the CAP are enshrined in the Treaty of Rome, the very foun-

dation of the European Community. The EC's supranational political decisionmaking machinery is cumbersome, and a consensus, when achieved among 12 very different national political systems, tends to be based on the lowest common denominator of widely disparate interests. It will be difficult to reverse or to change the complex agricultural price-support and interventionist programs built up over the past 30 years. This is clearly evident in the prolonged and intense struggles within the EC in recent years to achieve marginal changes in prices and production control in the dairy, beef, and cereal sectors. The challenges involved in reforming the basic foundation of the CAP — a continuing objective of the United States in the GATT trade negotiations — are intimidating and contentious.[42]

The changes required in the United States' domestic agricultural policies to comply with the objectives of the negotiating position it tabled with the GATT in 1987 are far more sweeping than anything previously dealt with in that country. The zero-subsidy objective by the year 2000, if achieved, would entail a major dismantling of U.S. agricultural policies and programs, some of which have their origins in the *Tariff Act of 1930*, in domestic agricultural legislation passed in the *Agricultural Adjustment Act of 1933*, and in the GATT waiver granted to the United States in 1955. One need only examine the congressional debates that developed around previous changes in U.S. agricultural legislation to recognize how extremely difficult it has been to achieve even modest changes in that country's long-standing agricultural policies and programs.

The record of experience relating to changes and reforms of agricultural policies and programs in other countries, such

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42 J. Rosenblatt, et al., *The Common Agricultural Policy of the European Community*, International Monetary Fund Occasional Paper 62 (Washington, D.C.: International Monetary Fund, November 1988), pp. 21–25.

as Japan and Canada, is strikingly similar to that in the EC and the United States. At the best of times, incremental change and reform are difficult to achieve; major and sweeping changes in domestic agricultural policies are rare indeed.

When the forces discouraging trade reform are weighed against the basic factors supporting greater liberalization of agricultural trade, however, there is some room for optimism. In launching the Uruguay Round, the GATT signatories acknowledged the seriousness of the global agricultural situation and affirmed their commitment to agricultural trade reform. Most, if not all, GATT members remain determined to achieve that objective. As wide as the differences are among the initial negotiating positions of the major trading countries, particularly the EC, the United States, and Japan, workable compromises are still possible.

In the long term, national budgetary costs, the problems of the debt-burdened developing countries, global financial instability, and the larger geopolitical issues associated with the current conditions of world trade dictate that fundamental reform must occur in national and international trading practices and policies.

It is imperative that the agricultural trade negotiations move forward, if only incrementally, to avoid the collapse of the entire Uruguay Round of negotiations. No single country, or trading block, can isolate itself for long from international issues and difficulties. The challenge of global trade reform is a formidable one, but in a highly interdependent and fragile world economy, it is one that must be overcome. There really is no viable alternative in the long term.

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43 S. Tangermann and T. Josling, "An Agreement for April," *AgraEurope*,

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Canadian Agriculture in a Changing World Economy

World agricultural conditions are changing rapidly, with profound implications for Canadian agricultural policies. Negotiations on the liberalization of agricultural trade in the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) also present challenges for Canadian agriculture. Challenges also bring opportunities, however, and the next few years will determine the extent to which Canada takes advantage of them to improve the competitiveness of its agricultural producers in the international marketplace.

This final chapter briefly surveys the current setting for Canadian agriculture, the structure of Canada's farm policies, and the implications for Canada of agricultural trade liberalization. It closes by examining major policy challenges facing Canadian agriculture, and offers a look forward to the year 2000.

The Current Setting for Canadian Agriculture

Approximately 4 percent of Canada's 26 million people are associated with the primary agricultural sector. There are

fewer than 300,000 farms, the majority of which are classified as family farms; these farms vary tremendously in terms of size, capital investment, tenure structure, and dependency on off-farm sources of supplementary income.

The three prairie provinces account for 17 percent of the total population, one-half of the farms, 78 percent of the improved farmland, and two-thirds of the total cash crop receipts. The two large provinces of Ontario and Quebec contain 62 percent of Canada's population, and account for over 70 percent of the cash farm receipts from dairy products, two-thirds of the national supply-management quotas for chickens and turkeys, and 55 percent of the national egg quota.

Approximately one-half of Canada's cash farm receipts is derived from export sales, including 75–80 percent of wheat sales, 60–70 percent of canola, 40 percent of barley, and 25 percent of hog sales.

With the exception of significant imports of sugar, sheep meat, tropical and semitropical food products, and some out-of-season vegetable and tree-fruit crops, Canada is close to being self-sufficient in most agricultural commodities. National quotas for Canada's supply-managed commodities — dairy products, eggs, chickens, and turkeys — are aimed at self-sufficiency, with provisions for marginal imports and exports. While Canada only produces a small net excess of beef products, trade is important to this sector as well.

Approximately 30 percent of Canada's agricultural import trade is regarded as complementary — that is, it does not compete with products grown in Canada. Part of the import trade is also supplementary, in the sense that Canada does not produce sufficient quantities of some commodities to meet year-round requirements. The remainder of the import trade may be regarded as directly competitive with nationally produced like commodities.

International trade policies have a variety of effects on different regions of Canada, depending on the commodities involved. In general, the grain, oilseed, and red meat sectors are

heavily dependent on export trade, while the supply-managed sectors are largely geared to domestic market requirements as a matter of policy. Grain trade policies are of predominant importance to the prairie provinces, while a large number of agricultural producers in Ontario and Quebec have a predominant interest in domestic and trade policies that support and protect the supply-management programs for dairy products, chickens, eggs, and turkeys.

Given the substantial regional and commodity differences in Canada's agricultural industry, there is no monolithic agricultural policy structure that permits a readily identifiable and common approach to international trade policies and issues. Canada's agricultural producers and the provinces view liberalization of global agricultural trade in many different ways. The Uruguay Round's focus on nontariff, trade-restricting measures highlights these differences of views and explains why national farm organizations and the federal government have had considerable difficulty in developing a consistent position on agricultural trade policy.

Federal-Provincial Aspects of Agricultural Policy in Canada

Agricultural policymaking in Canada is complicated by the fact that two levels of government are generally involved in the policy process. This is the fundamental reality of the Canadian federal system of governance.

While the Canadian Constitution does provide basic principles and guidelines relating to the respective jurisdictional powers and responsibilities of the federal and provincial governments, the dividing line between the two levels of government is ambiguous insofar as many agricultural policies are concerned.[1] This ambiguity has led, at times, to

1 See R. Simeon, *Division of Powers and Public Policy* (Toronto: University of Toronto Press, 1985); and D.V. Smiley, *Canada in Question: Federalism in the Eighties* (Toronto: McGraw-Hill Ryerson, 1980).

some serious and fundamental conflicts, not only between the two levels of government but also among the provinces. Some of these conflicts have been resolved in the political arena; others have been referred to the courts for resolution. Still others have been resolved by joint federal-provincial programs and arrangements.

During the past two decades, the provinces have developed a number of their own commodity price and income policies. Some of these programs have led to interprovincial trade barriers and to costly, competing, and ultimately self-defeating subsidies. The primary objective of the 1985 amendments to the *Agricultural Stabilization Act*, providing for a national tripartite program for red meat, was to combine the various federal and provincial programs into one nationally integrated policy supported jointly by the federal and provincial governments and livestock producers.

The concurrent jurisdictional powers of the federal and provincial governments over agricultural policy can complicate decisions on agricultural trade. The Constitution does, however, provide the federal government with the authority and responsibility for international trade matters. Many of the provisions of an international trade agreement on agriculture, however, cannot be implemented without the provinces' cooperating by passing complementary legislation.[2]

The Structure of Canada's Farm Policies

In recent years, a number of quite detailed studies have examined the structure of Canada's domestic farm policies and the extent of policy income transfers to agricultural producers. In general, policy transfers occur by way of income-

2 P.W. Hogg, *Constitutional Law of Canada*, 2nd ed. (Toronto: Carswell, 1985), p. 250; and D.V. Smiley, *Canada in Question*, pp. 46–49.

and price-support programs, production-input subsidies, marketing subsidies, long-term structural support, and provincial support programs (see Table 23). Most of these programs may be classified as commodity specific.[3]

In 1986, total policy transfers to Canadian agricultural producers amounted to $7.85 billion — equivalent to 43 percent of total agricultural income, including policy payments. The extent of this public involvement in Canadian agriculture is about the same as that for Canada's economy as a whole; in 1986, total government expenditure represented about 46.5 percent of gross national product.[4]

The significant increase in policy transfers to Canadian agricultural producers in recent years has been due in part to major drought aid programs and to transfers such as the Special Canadian Grains Program, which was designed to offset the harmful consequences imposed on Canadian grain producers by conflicts between the European Community (EC) and the United States on grain-export subsidies.

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3 See K.D. Meilke and T.K. Warley, *Issues in Negotiating Reductions in Support for Canadian Agriculture*, Discussion Paper DP88/2 (Guelph, Ont.: University of Guelph, Department of Agricultural Economics, July 1988); United States, Department of Agriculture, Economic Research Service, *Estimates of Producer and Consumer Subsidy Equivalents, Government Intervention in Agriculture* (Washington, D.C., April 1988); Organisation for Economic Co-operation and Development, *National Policies and Agricultural Trade Country Study: Canada* (Paris, 1987); G. Skogstaad, *The Politics of Agricultural Policy-Making in Canada* (Toronto: University of Toronto Press, 1987); J.D. Forbes, R.D. Hughes, and T.K. Warley, *Economic Intervention and Regulation in Canadian Agriculture* (Ottawa: Supply and Services Canada, 1982); and J. Spriggs and G.C. Van Kooten, "Rationale for Government Intervention in Canadian Agriculture: A Review of Stabilization Programs," *Canadian Journal of Agricultural Economics* 36 (March 1988).

4 Canadian Tax Foundation, *The National Finances, 1987–88* (Toronto, 1988). In fiscal year 1986–87, the federal budgetary allocation to agriculture amounted to $3.33 billion, or about 2.8 percent of the total federal budget. Total policy transfers to Canadian agriculture of $7.85 billion in 1986 represented about 3.3 percent of gross national product.

Table 23

Government Transfers to Canadian Agriculture by Type of Policy, 1986 and 1982–86 Average
($ millions)

Policy	Amount of transfer	
	1986	1982–86 average
Income/price support	$5,757.3	$3,699.9
Input subsidies	152.4	118.5
Marketing subsidies	1,088.9	832.1
Long-term structural	312.6	315.4
Provincial programs	540.2	433.9
Total	*7,851.4*	*5,399.8*
Value to producers	18,214.0	17,438.6
13-commodity Producer Subsidy Equivalent	43.1%	31.0%

Source: United States, Department of Agriculture, Economic Research Service, *Estimates of Producer and Consumer Subsidy Equivalents* (Washington, D.C., April 1988), p. 38.

The objectives of, and reasons for, the transfer policies vary among commodities. In the grain industry, for example, programs such as the *Western Grains Stabilization Program Act* and the crop insurance program are aimed at yield, price, and income stabilization (see Table 24). A payment for western grain transportation reflects an agreement dating from 1897 — the Crow's Nest Pass Agreement — between Canadian Pacific Railway and the federal government, under which freight rates for grain moving from Western to Eastern Canada were set at a fixed rate "in perpetuity."[5] The present payment paid to the railways reflects the difference between the original "Crow rates" of 1897 and current transportation

5 See J.C. Gilson, *Western Grain Transportation* (Ottawa: Supply and Services Canada, 1982).

Table 24

Government Transfers to Canada's Wheat Sector, 1986 and 1982–86 Average

($ millions)

Item	1986	1982–86 average
Level of production (millions of tons)	31	26
Producer price ($ per ton)	117.0	159.0
Value to producers	$5,162.0	$4,684.0
Policy transfers to producers		
Income/price support	1,640.6	614.6
Input subsidies	59.1	47.6
Marketing subsidies	704.6	583.1
Long-term, structural	58.4	76.5
Provincial programs	112.8	104.5
Total transfers	*2,575.5*	*1,426.3*
Producer Subsidy Equivalent (percent)	49.9%	30.4%

Source: United States, Department of Agriculture, Economic Research Service, *Estimates of Producer and Consumer Subsidy Equivalents* (Washington, D.C., April 1988), p. 30.

costs; this transfer may be judged under the Uruguay Round of trade negotiations to have a trade-distorting effect and, accordingly, subject to modification, reduction, or elimination.

With some minor exceptions, most of the income transfers to the Canadian grain industry come directly from the public treasury, and not from consumers.

In the dairy sector, most income transfers come from consumers under the quota/administered price policy — estimated at $2.2 billion in 1986 (see Table 25). In the same year, direct income transfers under the *Agricultural Stabilization Act* amounted to $300 million. The dairy sector also receives a variety of other income transfers, in the form of production-input subsidies, and structural and development payments. In 1986, total policy transfers amounted to $2.8 billion, rep-

Table 25

Government Transfers to Canada's Dairy Sector, 1986 and 1982–86 Average

($ millions)

Item	1986	1982–86 average
Level of production (millions of tons)		
Manufacturing	4.9	4.9
Fluid milk	2.7	2.7
Producer price ($ per ton)		
Manufacturing	413.0	388.0
Fluid milk	515.0	499.0
Value to producers	$3,441.0	$3,227.0
Policy transfers to producers		
Income/price support	2,811.5	2,430.4
Direct payments	300.0	314.0
Quota/price support	2,200.0	1,812.2
Fluid milk premium	311.5	304.1
Input subsidies	22.7	13.6
Marketing subsidies	-205.5	-203.3
Long-term, structural	69.2	62.0
Provincial programs	98.7	77.6
Total transfers	*2,796.6*	*2,377.1*
Producer Subsidy Equivalent (percent)	81.3%	73.7%

Source: United States, Department of Agriculture, Economic Research Service, *Estimates of Producer and Consumer Subsidy Equivalents* (Washington, D.C., April 1988), p. 36.

resenting 81.3 percent of total income (including transfer payments) received by that sector.

Producers in Ontario and Quebec, who are responsible for over 70 percent of the national cash receipts from dairy products, will have a particular interest in the treatment of dairy policies in the Uruguay Round.

Border Measures

Many of Canada's current border measures and import restrictions complement existing domestic farm policies and programs.

Under current policies, wheat, oats, barley, and their products cannot be imported without a license.[6] The export of these same products is under the control of the Canadian Wheat Board.[7]

Under the *Meat Imports Act*, which was established in 1981, the Minister of Agriculture, with the concurrence of the Minister for International Trade, may from time to time impose quotas on beef and veal imports if it is judged that such imports have a harmful effect on Canada's beef industry. In 1985, for example, because of the rapid increase in subsidized exports of EC beef into the country, Canada imposed a global quota of 66.5 million kg. on beef and veal imports.[8]

The provisions of the *Dairy Commission Act* allow the federal government to control the import of any product that threatens to undermine actions taken under the Act to support the price of any dairy product. With the exception of cheese imports permitted under a specific annual import quota, imports of other dairy products are seldom permitted. Actions taken to control the import of dairy products are justified under the provisions of GATT Article XI, which permits supply-management programs under certain conditions.

The *Farm Products Marketing Agencies Act*, passed in 1972 and presented that year to the GATT for approval under the general provisions of Article XI, provides for the estab-

6 See G.E. Salembier, A.R. Moroz, and F. Stone, *The Canadian Import File: Trade Protection and Adjustment* (Montreal: Institute for Research in Public Policy, 1987), pp. 115–118, 127–133.

7 The federal government has announced that the Canadian Wheat Board's control over the export of oats will be removed beginning in crop year 1989–90.

8 Salembier, Moroz, and Stone, *The Canadian Import File*, p. 117.

lishment of national-supply management programs for products not covered by the *Canadian Wheat Board Act* or the *Dairy Commission Act*. The Act further provides for the establishment of national import quotas for such programs. To date, the supply-management program has been extended to chickens, eggs, and turkeys, and small numbers of imports of these commodities are allowed each year.[9]

Other border and import-protection measures include countervailing and antidumping duties. A countervailing duty may be applied where imported products are deemed to be subsidized by the exporter, and where such imports are judged to cause, or threaten to cause, material injury to a domestic industry. While Canada has used this type of control only infrequently, it has been applied during recent years to corn imports from the United States and to beef and pork imports from the EC. Canada's countervailing-duty legislation is generally consistent with the relevant GATT Articles and supplementary codes.

Canada applies antidumping duties to an imported product where it has been demonstrated that a foreign exporter sells to Canadian customers at prices below the normal price charged to customers in the exporting country, thereby causing, or threatening to cause, material injury to Canadian producers of a like product. In recent years, Canada has applied antidumping duties to such products as yellow onion imports from the United States.

Both the EC and the United States have charged that Canada's provincial liquor boards and commissions have employed discriminatory pricing and markups on imported alcoholic beverages. The EC referred the issue to the GATT, which recently ruled that Canada is in violation of Article III. Canada must now accord national treatment to alcoholic beverages from the EC to comply with this GATT ruling, as

9 Ibid.; and Skogstaad, *The Politics of Agricultural Policy-Making in Canada*.

well as to wine from the United States, as it is obliged to do under the terms of the Canada-U.S. Free Trade Agreement.

It is clear that border controls of various types are a necessary adjunct to many of Canada's domestic farm policies. Canada's national supply-management programs, for example, could not achieve the objective of higher and more stable incomes for Canadian producers of dairy or poultry products without national import restrictions on competing products from other countries.

Implications of Agricultural Trade Liberalization for Canada

For the Canadian agricultural industry, the implications of liberalized agricultural trade as a result of the Uruguay Round will depend on a number of specific factors and considerations still to be clarified in the negotiations. Some of the more important of these include: an agreed definition of a trade-restrictive or trade-distorting measure; the extent of the agreed reductions in trading-distorting measures, and the length of time over which reductions are to be accomplished; and the nature and extent of the changes agreed to by the Contracting Parties in revising and strengthening GATT Articles, rules, provisions, and disciplines.

While the more specific aspects of the negotiating framework for the Uruguay Round are still to be resolved, Canadian agriculture clearly faces a number of general issues and necessary reforms.[10]

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10 See, for example, R. Tyers and K. Anderson, "Liberalizing OECD Agricultural Policies in the Uruguay Round," *Journal of Agricultural Economics* 39 (May 1988); A. Valdès, "Agriculture in the Uruguay Round: Interests of Developing Countries," *World Bank Economic Review* 1 (September 1987); and L.A. Winters, *Measuring the Economic Costs of Farm Support Policies* (Paper presented to an International Meeting convened by Wilton Park, the Trade Policy Research Centre, and the Australian Bureau of Agricultural Economics, Steyning, Sussex, U.K., May 1987).

In most developed countries, including Canada, the complete liberalization of world agricultural trade will lead to a general reduction in the welfare of agricultural producers, and to an increase in the overall national economic welfare of food consumers and taxpayers. Under these circumstances, it seems inevitable that some form of decoupling concept, combined with some type of trade-neutral, direct-income-payment policy, will have to be adopted if agricultural producers are to be persuaded to accept the domestic reforms that will be associated with the liberalization of agricultural trade.

Accordingly, the approach to the reform of Canada's domestic agricultural policies should be guided, *inter alia*, by two major considerations. First, existing policies that appear to have trade-distorting features and those policies that can be defended as trade neutral in effect should be identified. Second, alternative policy approaches should be developed that would permit the trade-distorting policies to be replaced with trade-neutral policies and, if necessary and appropriate, to be complemented with some form of trade-neutral, direct transfer payment or adjustment assistance.

For Canada, the potential advantages to be gained in the Uruguay Round will be increased to the extent that it is prepared to accept a set of GATT-compatible policies for its own agricultural industry. It is generally agreed that agricultural policies and programs such as research, inspection services, health requirements. and crop insurance are not likely to be judged as trade distorting.[11] Other programs, generally classified as stabilization policies — the *Western Grains Stabilization Act* and the *Agricultural Stabilization Act*, for example — also are not likely to be judged to have significant

11 See K.D. Meilke and T.K. Warley, *Issues in Negotiating Reductions in Support for Canadian Agriculture* (Guelph, Ont.: , University of Guelph, July 1988); Warley, T.K., "Canada's Food and Agricultural Policies" (Paper presented to the American Agricultural Economics Association Food and Agricultural Policy Workshop, Knoxville, Tennessee, July 30–31, 1988).

trade-distorting effects, although this question will be open to debate.

It is highly likely that many of the competing provincial programs will be judged to have trade-distorting effects. What is equally important, these same programs have a trade-distorting effect within Canada's internal "common market". However, the amendment of the *Agriculture Stabilization Act* in 1985 to permit a national tripartite red meat stabilization plan anticipated the need to integrate the various provincial programs into a nationally consistent trade-neutral policy. In fact, national agreement has been reached on a tripartite program for both hogs and beef, and this program should be far more compatible with GATT requirements than the previous multiplicity of provincial programs.

The western grain transportation payment could be judged to be a trade-distorting form of domestic policy. If so, Canada may have to develop an alternative, such as paying the benefit directly to producers rather than to the railways, in the form of either direct annual payments or a "once-and-for-all" lump sum payment.

The political difficulties involved in substituting direct income payments to producers for commodity-specific forms of price or income support should not be underestimated. Historically, agricultural producers have been reluctant to accept direct income payments that could be interpreted as a form of welfare; they have insisted on "justice in the marketplace", even if that justice involves some form of commodity-specific type of price support.[12] It may be, however, that such payments will become more acceptable as Canada faces up to current realities in the Uruguay Round.

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12 See Gilson, *Western Grain Transportation*; Skogstaad, *The Politics of Agricultural Policy-Making in Canada*; R.M. Christenson, *The Brannan Plan* (Ann Arbor: University of Michigan Press, 1959); United States Congress, Joint Economic Committee, *Policy For Commercial Agriculture* (Washington, D.C.: U.S. Government Printing Office, November 1957).

Canada will also have to face the challenges of possible changes to Article XI of the GATT, under which Canada has developed its supply-management programs. Canada defended this Article most vigorously during the free trade negotiations with the United States, and the final Agreement explicitly recognizes it.

Since the signing of the Agreement, however, differences of opinion have arisen between the two countries concerning the scope and coverage of Article XI. The United States has drawn the attention of the GATT Council to the fact that Canada has introduced import restrictions on ice cream and yogurt by requiring import permits for these commodities, contending that such an action is inconsistent with the provisions of Article XI.[13]

If Article XI is significantly modified in the Uruguay Round, it is reasonable to presume that the 1955 GATT waiver to the United States on Section 22 and the status of the EC's variable import levy would be subjected to critical examination during the same process.

If Article XI is changed in a way that forces Canada to reduce the border protection available to its supply-management programs, a major decapitalization would occur in the quota values that presently exist in these sectors, with serious consequences for Canadian agricultural producers.[14] On these grounds alone, one can anticipate resistance against any serious change in Article XI by producers of the supply-managed commodities, unless some acceptable alternative policy can be developed.

Without doubt, the treatment of Article XI will represent one of the more important aspects of the Uruguay Round negotiations insofar as the future direction of Canadian domestic agricultural policy is concerned.

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13 *GATT Focus*, January 1989.

14 Warley, *Canada's Food and Agricultural Policies*; R.R. Barichello, *Quota Allocation and Transfer Schemes in Canada*, Working Paper 8 (Ottawa: Department of Agriculture, June 1987).

Major Policy Challenges Facing Canadian Agriculture

From a domestic point of view, there are many reasons why Canada's agricultural policies should be subjected to a major review, including significant budgetary costs of some of the existing programs; the continuing need for *ad hoc*, emergency programs to supplement existing programs; the proliferation of competing provincial support programs; and the high entry costs encountered by young farmers in the supply-managed sectors as a result of the mounting capital value of the production quotas.

From an external point of view, increasing pressure will be placed on all countries, including Canada, to make their domestic policies more trade neutral in effect. These external pressures will force Canadian governments and agricultural producers to develop a more explicit and internationally defensible set of domestic agricultural and trade policies.

To date, Canadian agricultural trade policy, usually has developed as an extension of domestic farm policies, rather than systematically in ways that are consistent with Canada's GATT obligations. Further reform of Canada's agricultural policies should be guided by the following major considerations:

- The highly competitive world economy anticipated for the 1990s requires the development of a national economic environment within which Canadian agricultural producers will have the freedom to use their resources to maximum efficiency.
- World trade liberalization also calls for liberalization of trade within Canada — that is, for the creation of a Canadian "common market", not a national market divided into ten provincial economic zones, each striving for self-sufficiency in food production.

- Agricultural policies must encourage a long-term, sustainable form of food production based on considerations of land use, water conservation, and environmental and food safety.
- World and national events during the past 25 years have emphasized the need for some form of comprehensive, national stabilization policy, or national income safety net, to protect agricultural producers against calamitous and damaging climatic and economic hazards.
- National and international aspects of the agricultural industry must be recognized, insofar as possible, in the development of Canada's monetary and fiscal policies. The growing interdependence between the agri-industrial system and other sectors of the economy has exposed Canadian farmers, as never before, to the effects of macroeconomic policies.
- Domestic agricultural policies need to become consistent with the general obligations that Canada assumed as a Contracting Party to the GATT.

Reform of Canada's agricultural policies to meet the challenges of the 1990s does not call for all existing programs to be scrapped, or for a revolution to occur in the industry. But it will require major adjustments and consolidation within and among many existing programs. The continuing demand for *ad hoc*, emergency programs indicates the serious weaknesses and limitations of current policies. For example, in spite of the fact that Canada has a national crop insurance program, federal and provincial governments have been involved in recent years in costly, administratively complex, and controversial *ad hoc* emergency drought-relief programs.

During the past 20 years, federal and provincial governments have developed a large number of income-support and stabilization policies for a variety of agricultural commodities. Each of these programs has merit and all of them are aimed

at the same general objectives. But taken as a whole, this collection of policies has generated significant duplication and conflict among commodities and regions, and has created considerable uncertainty for the intended beneficiaries. The time appears to have come for the consolidation of this multiplicity of programs into one national, comprehensive, income-stabilization policy.

Most important of all, the preoccupation with current problems and issues has tended to obscure the need for long-range policies designed to build on the underlying strengths and potential opportunities of the Canadian agricultural industry. Defensive policies are necessary, but they are not a substitute for policies designed to encourage and promote expansion and growth in a rapidly changing global economy.

It would be a pity, indeed, if the vision of "what might be" for Canadian agriculture is blurred by policies that are overly preoccupied with current problems and issues.

Opportunities and Prospects to the Year 2000

Several forces will have a major impact on Canadian agriculture during the next decade: a projected world population increase of 1 billion people, nearly 80 percent of which will occur in the less-developed countries; an expected rise in incomes in many of the less-developed countries; the outcome of the agricultural reforms in China and the Soviet Union; and finally, of course, the outcome of the Uruguay Round of trade negotiations.

Increasing world population and rising incomes in the less-developed regions could result in an aggregate annual global increase in cereal consumption of 370–380 million tonnes by the year 2000. Canada's share of the increased grain exports that would be associated with this demand could be more than 10 million tonnes annually by the year 2000. A

major failure by the Soviet Union or China to achieve production targets by the end of the 1990s could result in still further grain export possibilities for Canada. In addition, there will be a substantial increase in the world demand for oilseeds, oilseed products, and red meats by the end of the century.

In view of the difficulties faced by Canadian agriculture during much of the 1980s, do these possibilities represent realistic prospects for the year 2000? Let us look at the record of the past ten years.

In 1978, the prospects for expansion beyond the 22 million tonnes of grain exported in that year did not appear bright, yet over 33 million tonnes of grains were exported in 1985.

In 1978, Canadian hog producers would have been satisfied to meet national pork requirements; in 1988, Canada was exporting in excess of 200,000 tonnes of pork and over 1 million live hogs. In 1978, Canada exported 1.5 million tonnes of canola; by 1987–88, these exports had increased to 3.6 million tonnes.

By crop year 1986–87, Canada was exporting wheat to 63 countries and barley to 18 countries.

This remarkable expansion in Canada's agricultural exports occurred during a period of continuing international agricultural trade conflicts. And what of the future?

Each year between 1988 and 2000, over 86 million new food consumers will be added to the global community, and each year these new consumers will demand an additional 28 million tonnes of grains, 1.6 million tonnes of red meats, and 5.6 million tonnes of oilseeds and oilseed products. Much of these additional food supplies will come through international trade.

Canadian agricultural growth to the year 2000 will depend heavily on a favorable international trade policy environment, one in which efficiency, comparative advantage, and constructive national agricultural policies are not frustrated by other countries' adverse policies, as has occurred in the 1980s. By

itself, however, a more favorable global trading environment will not guarantee growth and development of the Canadian agricultural industry. World competition for agricultural markets will be intense, and potential customers for agricultural products will not automatically come to Canadian agricultural producers, order books in hand. Expansion of Canadian agricultural exports to the end of the century will call for a major national focus on aggressive market development and promotional activities. Past successes in the export market do not guarantee a continuation of that success in the future.

There should be no illusions about the serious challenges and issues that Canadian agricultural producers will face during the next decade. Solutions to current global agricultural trade problems will be controversial and protracted. Instability in international markets will continue to cause booms and busts in the Canadian agricultural industry. But all is not doom and gloom. There are opportunities for further expansion of Canada's agricultural export markets. With appropriate domestic policies, those possibilities can be realized.

The global challenge, *cibus ad omnes* — food for all — represents Canada's challenge for the remainder of this century.

Epilogue

The Extended GATT Midterm Review, April 1989

At the end of the GATT Midterm Review held in Montreal in December 1988, the participants reached agreement on 11 of the 15 subjects on the agenda. One of four sectors on which they were unable to agree was agriculture.

Because of the central importance of agriculture to the overall Uruguay Round negotiations, a decision was made at the Montreal meeting to extend the deadline for the completion of the Midterm Review to the beginning of April 1989, at which time a further meeting would be held in Geneva to conclude the negotiations.

The April 1989 Geneva meeting concluded with an accord on all 15 subjects.

The most notable achievement was the agreement on a general framework for continuing negotiations on agriculture. This framework includes both long- and short-term elements and guidelines. The general consensus is that agricultural policies should be more market-oriented in terms of international trade, and that agricultural-support and protection policies should be reduced progressively and developed in a less trade-distorting manner.

Long-Term Elements and Guidelines for Agricultural Trade Reform

The long-term objective of the agricultural negotiations is to provide for *substantial, progressive reductions*, over an

agreed period of time, in all measures directly and indirectly affecting market access and export competition, in particular. This is to be achieved through negotiations both on specific policies and measures and on national commitments based on some aggregate measure of support, and it is to be based on strengthened and operationally effective GATT rules and disciplines. Credit will be given for any measures implemented since September 1986 that contribute to the achievement of the program of trade reform.

Negotiations on market access are to include the following measures: quantitative and other nontariff restrictions on access, whether maintained under waivers, protocols of accession, or other derogations and exceptions; all measures not explicitly provided in the General Agreement; and tariffs, including bindings. There is agreement to convert many of these market access restrictions into tariffs.

Negotiations on subsidies and export competition will include: internal support measures (including income and price support) that directly and indirectly affect trade; direct budgetary assistance to exports, other payments on exported products, and other forms of export assistance.

The program for agricultural trade reform includes two important qualifications. First, special and differential treatment to developing countries is to be an integral part of the negotiations. Second, account is to be taken of measures aimed at such vital national concerns as food security.

The following work program and time schedules are a part of the negotiations relating to the long-term objective:

- By December 1989, participants are to provide detailed proposals on a number of measures, including, *inter alia*: the terms and use of an aggregate measure of support; strengthened and more operationally effective GATT rules and disciplines; tariffication, decoupled income support and other ways to adapt support and protection; and measures

relating to special and differential treatment for developing countries.

- By the end of 1990, participants are to agree on a program for long-term reform and the period of time for its implementation.
- Implementation of the agreed commitments relating to the long-term program of reform is to commence during 1991.

Short-Term Elements of the Reform Program

During 1989 and 1990, within the scope of their existing legislation and GATT rights and obligations, participants in the Uruguay Round trade negotiations are not to increase their domestic and export support and protection levels above current levels. More specifically, support prices to producers, which are set directly or indirectly by governments or their agencies, are not to exceed those levels — expressed in national currencies — generally prevailing in April 1989. Opportunities for market access granted to individual products in 1989 and 1990 are not to be less, on average, than those granted in 1987 and 1988.

By October 1989, the participants are to outline their commitments for the reduction of support and protection levels for 1990. These commitments can be expressed either as an aggregate measure of support or through specific policy measures.

A General Assessment

At the April 1989 Geneva meeting, GATT participants adopted in principle, a number of fundamental and potentially far-reaching trade reform measures. Some of the more important of these statements of principle need to be reiterated:

- agricultural policies are to be more responsive to international market signals;
- many current import restrictions, including waivers, protocols, and other derogations are to be converted into tariffs;
- decoupled farm income support is to be recognized as a means of separating income support to producers from the resource-allocating functions of the marketplace;
- an aggregate measure of support is to be adopted as a means of quantifying the multiplicity of restrictions on market access and trade-distorting export measures involved in the agricultural trade negotiations; and
- all measures affecting import access and export competition are to be brought under strengthened and more operationally effective GATT rules and disciplines.

If these general statements of principle are adopted in practice, there can be little doubt that there will be major changes in the development of national agricultural policies and in the way agricultural trade is conducted among countries.

There is still a long way to go and still many issues to be confronted, however, before the conclusion of the Uruguay Round negotiations at the end of 1990. The problems involved in translating the general commitments and statements of principle into practice are enormous and intimidating. The political capacity of governments and farm leaders to initiate and sustain the national policy changes associated with a more liberal agricultural trading system will be thoroughly tested. In the final analysis, agricultural trade reform calls for the dismantling of a system of protectionist policies that has evolved over several decades. There really is, however, no long-term, viable alternative to the reforms called for under the 1989 Geneva agreement.

In many respects, the GATT Midterm Review, which began in Montreal in December 1988 and concluded four months later in Geneva is a remarkable achievement. It reaffirms the general commitments the GATT Contracting Parties made when the Uruguay Round was launched in September 1986, and it provides the basic objectives, framework, and political impetus for the remainder of the negotiations in this round. Indeed, this is the first time since the GATT was established in 1947 that such a comprehensive effort has been made to cope with world agricultural trade problems. There is hope that a universal, transparent, globally acceptable, liberal trading arrangement for agriculture will be in place for the 1990s.

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* The views expressed in this publication are those of the author and do not necessarily reflect the opinions of the Institute's members.

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J.C. Gilson

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